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26/GS Trg Publications/1936

Infantry Training

Volume II

INFANTRY HEAVY WEAPONS

PAMPHLET No. 24

THE MEDIUM MACHINE GUN

PART II—DRILLS AND TRAINING

1951

(This pamphlet supersedes Small Arms Training, Volume I, Pamphlet No. 7, Part II, 1944 (Code No. 7227))

By Command of the Army Council.

G. W. Pinner.

THE WAR OFFICE,
20th August, 1951.

AMENDMENTS

DISTRIBUTION

(see Catalogue of War Office Publications, Part II)

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ABBREVIATIONS

The following abbreviations are used in this pamphlet:—

DP	...	Drill pattern.
IA	...	Immediate action.
MMG	...	Medium machine gun.
MPI	...	Mean point of impact.
OP	...	Observation post.
RAP	...	Regimental aid post.
RV	...	Rendezvous.
QE	...	Quadrant elevation.

GLOSSARY OF TERMS USED IN THIS PAMPHLET

Angle of sight

The angle contained between the line of sight and the horizontal plane. The angle is said to be plus when the target is above the horizontal plane and minus when the target is below it.

Crest clearance angle

The angle by which the barrel must be raised above the line of sight to the crest to ensure that all the bullets will clear the crest.

Deflection

A lateral displacement of the lines of any, or all, guns.

Direct fire

When the gun is laid directly on the target by means of the backsight and foresight.

Fixed line

A term denoting that measures have been taken for maintaining elevation and direction in darkness etc, to ensure that fire will fall on the pre-arranged area of ground.

Flanking fire

Fire applied across the front of a locality occupied by own troops, or, if they are advancing, at an angle to their line of advance.

Ground angle

The angle contained between the line of sight to the target and the line of sight to own troops when using overhead fire.

Group commander

An officer or NCO commanding two or more machine gun sections.

Indirect fire

When a gun is laid to hit a given target by other means than by laying on it direct.

Line of fire

The direction of the target from the gun.

Minimum clearance

A term used to denote the minimum height of the centre bullet of the cone above the heads of our own troops for the latter to be safe.

Near limit of arc

The nearest line across the arc of fire on which fire may be required.

Overhead fire

Fire passing over the heads of our own troops.

Pivot gun

The gun used as a basis for calculation.

Quadrant angle

The angle which the axis of the barrel makes with the horizontal plane.

Quadrant elevation

The quadrant angle expressed in terms of a range and an angle of sight.

Registering

The recording of the direction and elevation necessary to hit any given target as found by ranging.

Safety angle for flanking fire

The minimum lateral angle by which fire must clear own troops for them to be safe.

Safety angle for overhead fire

The minimum angle which must be included between the axis of the barrel and the line of sight to own troops to ensure their safety under overhead fire.

Tangent angle

The angle which the axis of the barrel makes with the line of sight.

Zero line

A line of reference on which all guns are parallel and from which switches are measured.

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Infantry Training

VOLUME II

INFANTRY HEAVY WEAPONS

PAMPHLET No. 24

The Medium Machine Gun**Part II—Drills and Training**

CHAPTER 10

GUN DRILL

INTRODUCTORY NOTES**Aim**

1. To teach the soldier his duties in handling the weapon as a member of a gun team.

Instructors notes

2. During gun drill, the gun will be mounted in the sitting position, but the instructor must emphasize that on active service and during the later stages of training, the tripod will always be adjusted to suit the ground and cover available.

3. All orders are shown in thick type throughout this part of the pamphlet.

4. When the instructor wishes to explain, demonstrate or criticize, he will first order "Rest" to allow the gun number to relax. On this order, the No. 1 will knock down the tangent sight. Before the drill is resumed he will ensure that the gun numbers adopt the correct position and are alert and ready for any order. This will be done by ordering "Position," when, if the sights had previously been knocked down, the No. 1 will raise them.

5. The instructor must insist on a high standard of drill throughout and see that the gun numbers remain still and in their correct position on the completion of any movement.

6. Although all lessons of gun drill are written for coming into action from the carrier, if carriers are not available it will be possible to bring the guns into action from the ground. The stores should be laid out on the ground as follows:—

The tripod on the left, with the legs to the rear, and the dial sight close to it.

The gun, with the muzzle forward, condenser tube attached and spare parts case placed two paces to the right of the tripod.

Two liners, the condenser can and the aiming post two paces to the right of the gun, with the condenser can on the right.

The position of the gun numbers and the words of command will be given as for the carrier.

On the command "Mount" the gun numbers will kneel by their respective stores. Nos. 1 and 2 will put on the dial sight and spare parts case, with the strap over the right shoulder and the case hanging on the left side.

7. Whenever possible in gun drill as many guns as are available should be used to give maximum squad practice.

Safety precautions

8. On all occasions when the gun and drill cartridges are used for instructional purposes, the instructor will carry out the following safety precautions.

- (a) Inspect all locks to ensure that the striker does not protrude through the firing pin hole.
- (b) Inspect all ammunition to ensure that all cartridges are drill.

9. When service stores are used, (a) above does not apply.

LESSON 48—LAYOUT AND INSPECTION OF CARRIER STORES

A INSTRUCTOR'S NOTES

Aim

1. To familiarize the soldier with the layout of a MG carrier and with the fittings peculiar to MGs.
2. To teach the responsibility for the checking and inspection of the main items of equipment in the MG carrier.

Class and instructors

3. Squads under squad instructors around the left side of the carrier.

Periods

4. One 45-minute period.

Stores

5. One gun carrier complete with gun drill stores, *ie*, gun, tripod, condenser can and tube, dial sight, aiming post spare parts case, three liners, belt and drill cartridges.

Preparation

6. The gun should be mounted on the carrier and the stores in their correct position—one liner being in the gun rack and two in the right side racks.

B CONDUCT OF LESSON

Approach

7. Give the aim of the lesson (*see* paras 1 and 2). Point out the layout of the gun stores in the carrier and the positions of the gun numbers. The driver and No. 1 sit in the front compartments, the No. 2 in the left side, and the No. 3 in the right side rear compartments.

The Carrier mounting fitting

8. Show that the carrier mounting fitting consists of a socket fitted to the engine cowling into which can be fitted the emergency mounting or the crosshead of the tripod.

The emergency mounting

9. State that the emergency mounting is provided for the engagement of opportunity targets up to 600 yards.

10. Point out the following features of the mounting:—

- (a) The all round traverse.
- (b) The pins to secure the gun to the mounting.
- (c) The travelling stay.
- (d) The shoulder piece with which elevation and direction of the gun can be controlled.
- (e) The depression stop, to prevent bullets striking the inside of the carrier.
- (f) The rack for the liner on the gun mounting.
- (g) The condenser tube fitted to the mounting through which the steam escapes into an auxiliary condenser can in the carrier fitted under No. 2 seat.
- (h) The traversing clamp. This will never be tightened when the gun is on the emergency mounting.
- (j) The ease with which the gun can be removed from the mounting and the mounting can be removed from the socket.

The Crosshead mounting

11. Remove the emergency mounting and place the tripod crosshead and gun on the fitting.

12. Tell the squad that the crosshead mounting is used when engaging a target from a carrier in a hull down position. It may be used for engaging targets at all machine gun ranges. Show the following features:—

- (a) The socket on the carrier is designed to fit the pivot of the crosshead.
- (b) By tightening the traversing clamp a fixed and steady mounting is obtained.
- (c) The condenser tube is inserted in the ground condenser can.

Maintenance of the emergency mounting and fitting

13. State that the pivot and socket will be cleaned and oiled daily to prevent rust forming from the steam. The hinge, nuts and bolts of the mounting will be kept oiled and free from grit. The following points should be examined periodically:—

- (a) Condenser tube.
- (b) Feathers on joint pins.
- (c) Chains.
- (d) Travelling stay.
- (e) Traversing clamp.

14. Question the squad.

15. Tell the squads that the serviceability of stores and equipment is the responsibility of the senior member in each carrier. Frequent inspection will be made to ensure that all stores are complete and in good order; an inspection will invariably be made as soon as is practicable after coming out of action.

16. Explain the responsibility of each member of the gun team:—

(a) The No. 1 will inspect:—

- (i) The tripod—to see that the elevating and crosshead joint pins are properly in position and turned down, both elevating screws equally exposed, traversing clamp adjusted to suit No. 1, crosshead over the rear leg, direction dial secure, and all three legs together and clamped securely.
- (ii) Dial sight—to ensure that all dials and drums are at zero and that it is not damaged.
- (iii) The ground mounting condenser tube—for serviceability.

(b) The No. 2 will inspect:—

- (i) The gun—to see that the muzzle attachment and blast deflector are correctly fitted, the front cover locked, the sliding shutter open, the lock in the gun and the T fixing pin screwed home and vertical.
- (ii) The spare parts case.
- (iii) The carrier condenser can—to ensure that it is secure and filled.

He will report “**Gun correct**” or otherwise to the No. 1.

(c) The No. 3 will inspect:—

- (i) The carrier mounting—to ensure that the traversing clamp is loosened, the condenser tube securely attached, the crosshead and elevating joint pins properly in position and turned down, that there is a liner in the rack of the gun mounting, that the travelling stay can be easily released, and that the emergency mounting works freely.
- (ii) The ground condenser can—to ensure that the can is filled, the cap screwed into position and the filler secure.

He will report “**Mounting correct**” or otherwise to the No. 1.

17. Question the squad.

Conclusion

18. Questions to and from the squad.

19. Sum up main points.

LESSON 49—PRELIMINARIES TO GUN DRILL

A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier preliminaries to gun drills and the technique of mounting and dismounting the tripod.

Class and instructors

2. Squads under squad instructors, in single rank on a flank of the carrier.

Periods

3. One 45-minute period.

Stores

4. One gun carrier complete with drill stores. Gun, tripod, condenser tube and can, dial sight in case, spare parts case, aiming post, three liners complete with belts and drill cartridges.

B CONDUCT OF LESSON**Preliminaries**

5. Safety precautions.

Approach

6. Give the aim as laid down in para 1.

“Fall In”

7. Detail a No. 1, 2, 3 and Dvr and state that on the command “**Fall In**” the gun numbers will double to their respective positions facing to the front, as shown in the Fig 6 below. On arrival at these positions they will stand at attention and, taking their time from No. 1, will number, and then stand at ease.

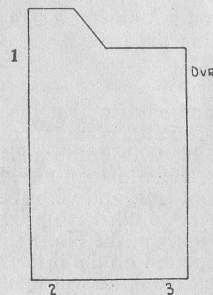


FIG 6

8. Practice the squad in “**Fall In.**”

“Change Round”

9. Explain that if at any time the instructor wishes to change the Nos. he will order “**Change round.**” On that command the detachment will move clockwise around the carrier; the No. 1 becomes the driver, the driver

becomes No. 3, the No. 3 becomes the No. 2 and the No. 2 becomes the No. 1. On completion of the movement the detachment will re-number again taking the time from No. 1.

10. Practice the squad in "Fall In" and "Change Round."

11. Detail a detachment, order "Fall In," and state that on the order "Mount" the No. 1 will repeat the order, and all Nos. will get into the carrier in their respective positions and remain still; No. 1 for the purpose of control will remain standing.

12. Order "Mount."

13. Tell the squad that on the order "Dismount" the No. 1 will repeat the order, all numbers will dismount and stand at ease in their respective positions by the carrier.

14. Order "Dismount."

15. Practise the squad in "Mount" and "Dismount."

16. Questions from the squad.

MOUNTING THE TRIPOD

Preparation

17. The instructor will remove the tripod from the carrier and place it on the ground in front of the carrier and move the squad in a semi-circle around the tripod.

Approach

18. Tell the squad that you are now going to teach them the technique of mounting and dismounting the tripod.

Mounting the tripod

19. Demonstrate slowly and explain that the No. 1 stands astride the tripod, loosens the jamming handles simultaneously and grasps the cross-head as far forward as possible with both hands, the thumbs being down the front of the crosshead. He will then swing the tripod upwards and forward to open the two front legs, and with the three legs resting on the ground, he will raise the socket until it is upright. To assist this, and to ensure that the mounting is upright, the No. 1 should assume a half sitting position with the elbows supported on the inside of the thighs, and keeping the socket steady with his left hand, he will tighten both jamming handles with his right hand. A final pressure will now be exerted on the jamming handles, and the No. 1 will sit down behind the tripod and remove the crosshead and elevating joint pins with the left and right hands respectively, and hold them.

Dismounting the tripod

20. Demonstrate slowly and explain that the No. 1 will replace the two pins and turn the handles down to prevent them falling out, jump to his feet and stand astride the tripod. He will loosen both jamming handles simultaneously, allowing the tripod to collapse on the ground.

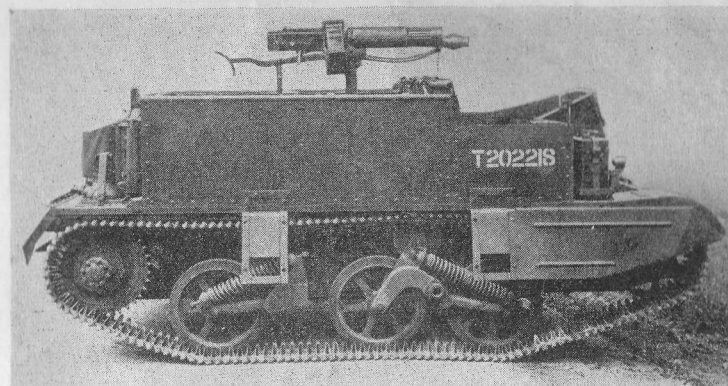


PLATE 6—Gun on emergency mounting.



PLATE 7—
Mounting the
tripod

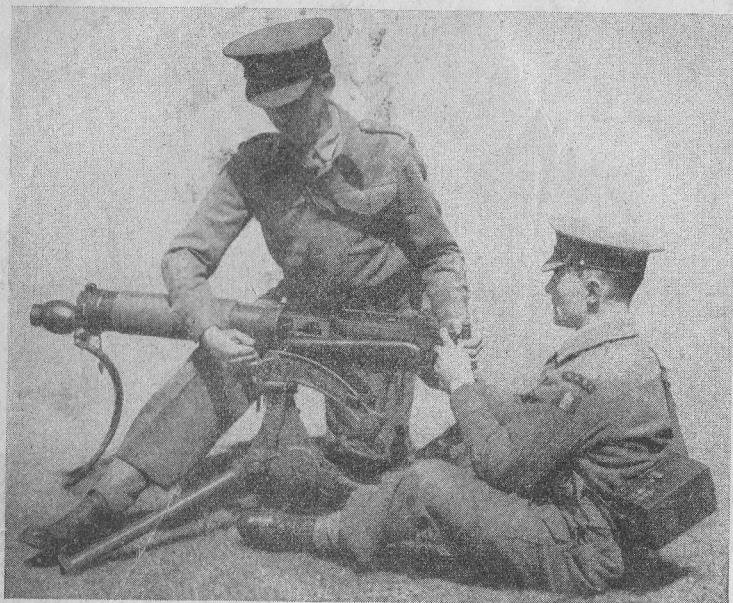


PLATE 8—Mounting the gun.



PLATE 9—Sitting position.

Standing on the left of the tripod he will grasp the crosshead with both hands, and with a sharp forward and upward movement allow the two front legs to fold under, at the same time taking a pace forward and placing the tripod on the ground. He will then sink down on to his right knee and tighten both jamming handles.

Practice

21. Practise the squad in mounting and dismounting the tripod slowly.

Conclusion

22. Questions from the squad.
23. Further practice, quickening up all movements.
24. Sum up progress made.

LESSON 50—ACTION AND CEASE FIRING FROM THE CARRIER

A INSTRUCTOR'S NOTES

Aim

1. To teach the duties of the various members of the gun team in coming into action from the carrier, and to cease firing.

Class and instructors

2. Squads under squad instructors assembled in single rank on one flank of the carrier.

Periods

3. One 45-minute period.

Stores

4. One gun carrier complete with drill stores.

Preparation

5. All stores loaded on the carrier, and if the ground is wet, ground-sheets should be placed on the gun position. Lesson 35 must have been taught before this lesson.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above).

"Action"

8. Detail a gun team, order "Fall In" and "Mount." Indicate with a gun flag a gun position a few yards in front of the carrier and the direction in which the gun is to be mounted.

9. Order the Nos. 2, and 3 to rest and look on. Tell the No. 1 that he is to carry out the following actions as they are detailed. On the command "Dismounted Action," the No. 1 will repeat the order, dismount from the carrier and sling the dial sight case over his right shoulder, remove the tripod, double forward to the position indicated and mount the tripod as already taught.

10. Order "Dismounted Action."

11. Order Nos. 1 and 3 to rest and look on. Explain, with the No. 2 practising, the duties of the No. 2 on the command "Dismounted Action." He will disconnect the carrier condenser tube and attach the ground mounting condenser tube. He will remove the crosshead and elevating joint pins and take the gun off the emergency mounting, placing it muzzle to the rear diagonally across the rear corner of the armour. He will then sling the spare parts case over his right shoulder and dismount from the carrier. Demonstrate the method by which No. 2 will carry the gun forward to the tripod. He will grasp the gun with his left hand on the right traversing handle and his arm over the barrel casing controlling the condenser tube and pick up the gun. Tell the No. 2 to pick up the gun as shown and double forward to the right side of the tripod with the traversing handles to the front, arriving at about the time that the No. 1 is removing the pins. Explain with the No. 2 practising that on arrival he will swing to his left so that the traversing handles are at the rear, sink down on to his left knee, place the gun on the tripod supporting the barrel casing on his right thigh, and with his right hand will insert the crosshead joint pin, which he will take from the No. 1, finally turning the handle down. He will retain his hold with his left hand on the right traversing handle until the pin is home. No. 1 will assist by gripping the left traversing handle with his left hand, and when No. 2 has inserted the crosshead joint pin, he will insert the elevating joint pin. No. 2 will then lie down on the right of the gun facing towards it, keeping as close as possible to the No. 1, his head in line with, but below the level of the feedblock.

12. Detail the additional duties of the No. 1. He will level the gun by means of the elevating wheel, tap the gun to see that the traversing clamp is reasonably tight, and take up the correct sitting position looking straight to his front.

13. Order the Nos. 1 and 2 to rest and look on. Explain with the No. 3 practising that the No. 3 will carry out the following duties on receipt of the command "Dismounted Action." He will dismount from the carrier, remove the condenser can, aiming post and two liners from the right side rack. He will double forward to a point in rear of the gun position and will rip open and press down the lids of the liners, and will unscrew, but not completely so, the cap of the condenser can. He will double forward to the right side of the gun, with the liners in his left hand and the condenser can in his right, arriving just as the No. 2 lies down. He will place

the condenser can near the tripod, and the ammunition liners within easy reach of the No. 2. He will remove the cap of the condenser can, double back to a suitable position in rear and lie down, keeping the aiming post with him.

14. Detail the additional duties of the No. 1 and 2. Explain that the No. 2 will place the liners in line with the feedblock, No. 1 and 2 will load the gun, and No. 2 will insert the condenser tube in the can making sure that the end of the tube is below the level of the water.

"Cease Firing."

15. Tell the squad that on the order "Cease Firing" Nos. 1 and 2 will unload the gun, and No. 2 will push the liners to the right. The No. 3 will double forward to the gun, and remove the condenser tube from the condenser can, seize the liners in his left hand and the condenser can in his right. He will then double back a few paces to the rear, place the stores on the ground, screw up the cap on the condenser can, replace them on the carrier, mount and take up his original position, reconditioning the stores if necessary.

The No. 2 will jump to his feet and after No. 1 has removed the pins, lift the gun off the tripod and grasp the free end of the condenser tube to prevent it trailing on the ground. He will then double to the carrier, place the gun diagonally on the rear corner, mount and replace the stores in their original positions, reconditioning them if necessary.

No. 1 will act as already taught, and replace his stores on the carrier, mount and recondition them if necessary.

16. Order "Cease firing."

Team practice.

17. Exercise the squad in the duties of Nos. 1, 2 and 3 in "Action" and "Cease Firing" as a team. When the gun is in action the instructor should discuss:—

- (a) The actions of the No. 1, 2, and 3 and their final positions.
- (b) Whether the tripod is mounted with reference to the direction indicated.
- (c) Whether the gun is level and the crosshead is over the rear leg.
- (d) Whether the socket is upright and over the spot indicated.
- (e) Whether the traversing clamp is too loose.
- (f) Whether the elevating and crosshead joint pins are home and locked.
- (g) Whether the jamming handles are really tight.
- (h) Whether the ammunition liners are in line and close to the feedblock, the condenser can in position, the tube inserted and the gun correctly loaded.

Mount and dismount gun

18. State that if at any time the gun is not to be loaded, the order given will be "Mount Gun," and the actions of the gun team will be the same with the exception that the gun will not be loaded.

Correcting a leaning mounting

19. Detail a gun team and order "Dismounted Action." When the gun is in action adjust the mounting so that it is leaning.

20. Explain with Nos. 1 and 2 practising, that to correct a leaning mounting, the No. 1 will order the No. 2 to push or pull the gun according to which way the gun is leaning. The No. 2 will grasp the feedblock and act as ordered, while the No. 1 will adjust the appropriate tripod leg. State that a leaning mounting must be corrected automatically directly it is noticed.

21. Practice will be obtained in correcting leaning mountings during the normal practice of "Action" and "Cease Firing."

Conclusion

22. Questions from the squad.
23. Further practice quickening up all movements.
24. Sum up main points.

LESSON 51—CLEAR GUN AND STAND CLEAR A INSTRUCTOR'S NOTES

Aim

1. To teach certain drills required in connection with safety precautions and range work.

Class and instructors

2. Squads under squad instructors, assembled in single rank on one flank of the stores.

Periods

3. One 45-minute period.

Stores

4. One gun carrier complete with drill stores.

Preparation

5. Stores loaded on the carrier, and if wet, ground sheets should be placed on the gun position.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Detail a gun team and order "Fall In," "Mount" and "Mount Gun." State the aim of the lesson. (see para 1).

"Clear Gun"

8. Order the No. 1 to fall out, the instructor taking his place and demonstrate that on the order, "Clear Gun," the No. 1 will pull the crank handle onto the roller, raise the rear cover, remove the lock from the lock guides and ease the crank handle forward on to the check lever, allowing the lock to rest on the hinge of the rear cover. He will then report "No. ... Gun Clear."

9. Demonstrate that on the order "Lock In Cover Down" the No. 1 will hold the lock with his left hand, pull back the crank handle onto the roller with his right hand and, easing the crank handle slightly forward, smother the lock into the lock guides with his left hand. He will then close the rear cover, release the crank handle and press the thumbpiece.

10. Tell the squad that if the order "Load" is given when the gun is "clear" the No. 1 will place the lock back in the gun, close the rear cover and load.

11. Practise the squad in "Clear Gun," "Lock in Cover Down," and "Load." Note: If the gun is loaded, "Clear Gun" will be preceded by "Unload."

"Stand Clear."

12. Explain that if the order "Stand Clear" is given, the gun team will jump to its feet and stand at ease behind the gun—the No. 3 in the rear. The dial sight box and spare parts case will be left on the gun position.

13. Tell the squad that if the order "Take Post" is given when the gun is mounted, the gun team will adopt their original positions at the gun. The No. 1 and 2 will sling the dial sight box and spare parts case over their shoulders and the No. 1 will retest the clamp.

14. Practise the squad in "Take Post" and "Stand Clear."

Conclusion

15. Questions from the squad.
16. Further practice in any drill which requires it.

LESSON 52—LAYING AND FIRING A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier how to lay and fire the gun.
2. To teach the soldier how to apply controlled corrections in direct fire.

Class and instructors

3. Squads under squad instructors. Squad standing in a semi-circle in rear of gun.

Periods

4. One 45-minute period. Instruction in aiming must have been given before this lesson.

5. Gun carrier complete with drill stores and in addition landscape or natural targets.

Preparation

6. Stores should be loaded on the carrier and if a landscape target is used, it should be erected in a suitable position just in front of the gun position. If wet, groundsheets should be placed on the gun positions.

7. The targets selected by the instructor must be simple, as the aim is to teach accurate handling and not recognition of targets.

B CONDUCT OF LESSON

Preliminaries

8. Safety precautions.

Approach

9. Detail a gun team and order "Fall In," "Mount" and "Dismounted Action." When the gun is in action order the gun team to fall out.

10. Give the aim of the lesson (see para 1).

11. Point out a few simple targets to be used during the lesson.

12. State that when the section commander orders the range to the guns, he will use the following terminology:—

- 700—Seven hundred.
- 1,000—One thousand.
- 1,050—One one hundred and fifty.
- 1,400—One four hundred.
- 1,550—One five hundred and fifty.
- 2,000—Two thousand.
- 2,300—Two three hundred.
- 2,350—Two three hundred and fifty.

Adjusting the sights and laying the gun

13. The instructor will take post as No. 1, one of the squad acting as No. 2, and will demonstrate that on the range being ordered the No. 1 will raise the tangent sight with the left hand and set the slide. When the indication followed by the command "Lay" is given, he will tap the gun until the correct direction is obtained and elevate or depress it until the aim is correct. Confirm that when tapping the gun or turning the handwheel, the No. 1 will maintain control of the gun by keeping the disengaged hand on the traversing handle.

14. Tell the squad that when No. 1 has a correct aim he will shout "On" and raise the safety catch. The No. 2 will then raise his left hand in line with the No. 1's shoulder as a signal to the fire controller.

15. State that if the No. 1 fails at any time to understand or hear an order, he will call "Again."

16. Practise the squad.

Use of the clamp

17. The instructor should take post as No. 1 with one of the squad acting as the No. 2. Explain to the No. 2 that on the order "Clamp Two," he will loosen the clamp and on the order "Tighten" he will tighten it. Demonstrate that if a large change of direction is necessary, the No. 1 will order "Clamp Two" and when the clamp is loose swing the gun round to the general direction of the target. He will then order "Tighten" and when the clamp is tight test it and lay on the target.

18. Practise the squad in large changes of direction.

"Fire" and "Go on"

19. Tell the squad that on the order "Fire" or "Go on" the No. 2 will lower his left hand and repeat the order. The No. 1 will press the thumbpiece home, keeping his eyes on the target to observe the fire effect. The No. 1 will press and release the thumbpiece as taught in Lesson 2 checking his aim from time to time.

"Stop"

20. State that on the order "Stop" the No. 2 will repeat it to the No. 1, who will release pressure on the thumbpiece and safety catch. The No. 1 will then check his aim and relay the gun if necessary.

21. Practise the squad in "Fire," "Stop" and "Go On." The instructor should occasionally knock the gun or turn the wheel while No. 1 is firing to practice the No. 1 in relaying when "Stop" is ordered.

22. State that during firing on the order "Stop, Up (or Down)—Hundred (or fifty) "Go On," the No. 1 will adjust his sights accordingly, relay and continue firing.

If the correction is not followed by the order "Go On" the No. 1 will report "On" and await the order to fire.

23. Practise the squad in controlled corrections.

Conclusion

24. Questions from the squad.

25. Further practice in the whole process of coming into action and engaging a target.

26. Sum up main points.

LESSON 53—CONSISTENCY OF TAP A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier to develop a consistent tap so that the line of sight is displaced 15 minutes each time the gun is tapped.

Class and instructors

2. Squads under squad instructors, assembled in single rank on one flank of the stores.

Periods

3. One 45-minute period.

Stores

4. Gun carrier complete with drill stores and MG target. (Small Arms Training, Vol V, 1945, Fig 38).

Preparation

5. Stores loaded on the carrier, and if wet, groundsheets should be placed on the gun positions.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Detail a gun team, order "Fall In," "Mount" and "Dismounted Action." When the gun is in action order the gun team to fall out.

8. Give the aim of the lesson (*see* para 1), and state that the methods of engaging all types of machine gun targets depend on the fact that the No. 1 can bring bursts of fire down 15 minutes of angle apart. It is therefore essential that every man can tap his gun consistently through 15 minutes.

Consistency of tap

9. Tell the squad that the first stage is to develop a consistent tap with both hands. Place the dial sight on the gun and then demonstrate a consistent tap with both hands.

10. Practise the squad until all of them can tap consistently. The instructor must not move onto the next stage until he is satisfied that they can do so.

11. The instructor should bring out the following points:—

- (a) When tapping with either hand the gun must be held correctly with the other hand and the safety catch kept raised.
- (b) The eyes must be directed to the front to observe fire.

Adjusting the clamp

12. Place out the MG target 25 yards from the gun. State that the next stage is to adjust the clamp so that the tap consistently displaces the line of sight 15 minutes. Point out that the distance between the bulls on the target is equivalent to 15 minutes.

13. Demonstrate that the clamp is tightened as much as possible by the No. 1 behind the gun. By trial and error, he adjusts his tap until he discovers the strength of tap required to displace the line of sight from one bull to the next. The strength of tap should be ascertained for each hand.

14. Practise the squad. When each man has found the strength of tap required, the instructor should impress on him that he must get the feel of that tap and remember it.

15. Tell the squad that the No. 1 can test his clamp in the field by measuring off with hand angles two points which are one degree apart. By laying on one point and tapping four taps towards the other, he should reach the second point if the clamp is correctly adjusted.

16. Practise the squad.

Tapping test

17. A method of testing the squad for correct tapping is given below:—

- (a) The instructor will give the No. 1:—
 - (i) A suitable range.
 - (ii) An indication to a bull in the horizontal row.
 - (iii) The direction in which he is to tap.
 - (iv) The order to "Lay"
- (b) The instructor will explain to the No. 1 that, on the order "Fire" he will fire a burst, release the thumbpiece, tap the gun and fire again. He will continue this procedure until "Stop" is ordered. The No. 1 will be told that, for this lesson only, he will not check his aim on the order "Stop" nor relay between bursts.
- (c) The instructor will order "Fire" and, after a suitable number of taps, "Stop." He will then check the aim and discuss the No. 1's tapping.

Conclusion

18. Questions from the squad.
19. Further practice for backward men.
20. Sum up main points.

LESSON 54—TRAVERSING AND SWINGING TRAVERSE A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier to combine consistent tapping with corrections for elevation.
2. To teach the soldier how to fire a swinging traverse.

Class and instructors

3. Squads under squad instructors, assembled in single rank on one flank of the stores.

Periods

4. One 45-minute period.

Stores

5. Gun carrier, complete with drill stores and MG target. (Small Arms Training, Vol V, 1945, Fig 38).

Preparation

6. Stores loaded on the carrier. If wet, groundsheets should be placed on the gun positions.

B CONDUCT OF LESSON**Preliminaries**

7. Safety precautions.

Revision

8. Detail a gun team, order "**Fall In**," "**Mount**," and "**Dismounted Action**." Practise the squad in Lesson 53.

Approach

9. Give the aims of the lesson (*see* paras 1 and 2 above).

Traversing

10. State that the No. 1 will on occasion have to engage a target that is oblique as opposed to horizontal.

11. Detail a No. 1 and get him to lay on the centre bull of the oblique rows of bulls. Warn him that on the order "**Fire**," he will carry on exactly as taught in the last lesson, but that this time he will re-lay the gun on to the bull immediately above or below the point to which the tap has carried it, after each tap.

12. Practise the squad in tapping and re-laying for elevation. Get the squad to criticize the consistency of tap of each No. 1.

Swinging traverse

13. Explain that this method of traversing is only employed against targets at close ranges when the normal method of traversing is likely to be too slow.

14. Demonstrate that the clamp is loosened slightly. The gun is laid on one end of the target and, when the thumbpiece is pressed, it is swung slowly to the right or left. To do this with control, the upper part of the body is left rigid and the gun swung by the weight of the body rather than by moving the forearms.

15. The technique of firing a swinging traverse cannot be well attained without using live ammunition as the recoil helps in moving the gun. The squad should therefore be practised in firing a swinging traverse on the range when the opportunity arises.

Conclusion

16. Questions from the squad.
17. Sum up main points.

LESSON 55—APPLICATION OF DIRECT FIRE ORDERS**A INSTRUCTOR'S NOTES****Aim**

1. To teach the soldier how to act on the various parts of a direct fire order.

Class and instructors

2. Squads under squad instructors. The squad should be in single rank behind and between the two guns.

Periods

3. Two 45-minute periods. Lesson 68 must have been taught before this lesson.

Stores

4. Two gun carriers complete with drill stores, portable blackboard, chalk and landscape or natural targets.

Preparations

5. The instructor should select targets of various types and decide on ranges before the lesson begins. The guns should be mounted 6-8 yards apart facing the arc. If wet, groundsheets should be placed on the gun positions.

B CONDUCT OF LESSON**Preliminaries**

6. Safety precautions.
7. Detail two gun teams, order "**Fall In**," "**Mount**," and "**Dismounted Action**." Organize the arc of fire and order the gun teams to fall out.
8. Give the aim of the lesson (*see* para 1).

Approach

9. Using the blackboard, show the sequence of a direct fire order:—

- (a) Designation.
- (b) Range (including wind allowance if necessary).
- (c) Indication of the target.
- (d) Method of fire.
- (e) Lay.
- (f) Side wind allowance.
- (g) Rate of fire.
- (h) Order to fire.

Types of targets

10. With the blackboard, explain the various types of static MG targets:—
- (a) *Point target.* A target that appears to the naked eye to have no appreciable width.
 - (b) *Traversing target.* A target that appears to the naked eye to have width. The difference in range to each end must not exceed 50 yards.
 - (c) *Depth target.* A target with a difference in range to each end of more than 50 yards. It may or may not have width.

11. Indicate one or two targets and question the squad as to what type they are.

Point targets

12. Detail a No. 1 and 2 for each gun and order "Fall In" and "Take Post." Divide the rest of the squad into two groups, one behind each gun.

13. State that a Point target is always engaged with right and left two taps to make sure that the target is hit. Explain how the No. 1 applies "Right and left two taps." (see Lesson 96).

14. Explain that the side wind allowance is ordered in taps up to one degree. If the allowance is of one degree or more, it is given in degrees.

15. Give a fire order onto a Point target, explaining the duties of No. 1 at each stage of the order:—

Order.

Action of No. 1.

- (a) Designation. Becomes fully alert to receive the fire order.
- (b) Range. Raises the tangent sight and sets the slide.
- (c) Indication. Follows the indication and locates the target.
- (d) Right and left two taps, Lay. This order indicates to the No. 1 that he must engage the target with right and left two taps. The No. 1 grasps the traversing handles correctly, raises the safety catch and reports "On."
- (e) Wind right (or left) taps. Taps the number of taps ordered and looking through the sights, picks up the new point of aim. Reports "On."

or

Wind right (or left)
..... degrees.

With the aid of handangles picks up the new point of aim, relays and reports "On."

(f) Rate of fire.

- (i) If "Rapid" is ordered, he then prepares to fire rapid.
- (ii) If none is mentioned, he then knows that normal fire is required.

(g) "Fire."

Presses the thumbpiece. Taps right and left two taps, checking his aim whenever he has tapped onto the point of aim.

16. State that the No. 2 must at all times be prepared to take over as No. 1. He must therefore know the range on the gun, the target and wind allowance.

17. Practise the squad in engaging Point targets. After each target is engaged, get the rest of the squad to criticize the action of No. 1 and No. 2.

Traversing targets

18. Explain the method of engaging a traversing target. (see Lesson 99).

19. State that on the order "Traversing Lay," the No. 1 will lay on the centre of the target, raise the safety catch and report "On." Emphasize that when firing, the line of sight is re-aligned after each tap.

20. Practise the squad in engaging traversing targets.

Depth targets

21. Explain the method of engaging a depth target. (see Lesson 100).

22. Tell the squad that the method of fire will be either "Halfway up, right and left two taps, Lay," or "Traversing Lay," depending on whether the target has width or not. On either order, the No. 1 will lay half way up the target, raise the safety catch and report "On." When firing, if "Halfway up, right and left two taps Lay," has been ordered, the No. 1 will maintain his point of aim halfway up throughout. If "Traversing Lay," is ordered, the No. 1 will realign his point of aim onto the target after each tap.

23. Practise the squad in engaging depth targets of both types.

Conclusion

24. Questions to and from the squad.

25. Ample practice will be required to ensure that the squad can respond accurately and rapidly to fire orders.

LESSON 56—CONTROLLED CORRECTIONS, INDIRECT (ELEVATION)

A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier to apply corrections for elevation to the dial sight.

Class and instructors

2. Squads under squad instructors assembled in single rank on the left of the gun.

Periods

3. One 45-minute period. Lessons 36, 38, 40 and 41 should have been taught before this lesson.

Stores

4. Gun carrier complete with drill stores.

Preparation

5. Detail a gun team and get the gun into action; when the gun is in action fall out the gun team, attach the dial sight, and plant the aiming post correctly. Set a suitable range on the range drum, level the bubble and adjust the lensatic sight onto the aiming post.

B CONDUCT OF LESSON

Approach

6. Give the aim of the lesson (*see* para 1 above).

7. The instructor should take post as No. 1 and explain that the gun is already laid to engage a target. He should then order "**Fire.**"

Controlled corrections (Elevation)

8. Demonstrate that on the order "**Stop, Up (or Down).....Hundred (or Fifty),**" the No. 1 will adjust the range drum as ordered. He will then elevate or depress the gun by turning the handwheel until the bubble is central and adjust the lensatic sight onto the aiming post. He will then report "**On.**"

9. Practise the squad in controlled corrections, using two guns if available.

Conclusion

10. Questions from the squad.

11. Further practice for backward men.

12. Sum up main points.

LESSON 57—CONTROLLED CORRECTIONS, INDIRECT (DIRECTION)

A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier to apply corrections for direction to the dial sight.

Class and instructors

2. Squads under squad instructors assembled in single rank on the left of the gun.

Periods

3. One 45-minute period.

Stores

4. Gun carrier complete with drill stores.

Preparation

5. Detail a gun team, and get the gun into action. When the gun is in action, fall out the gun team, attach the dial sight and plant the aiming post correctly. Set a suitable range on the range drum and a switch on the deflection drums of the dial sight. Level the bubble and adjust the lensatic sight on to the aiming post.

B CONDUCT OF LESSON

Approach

6. Give the aim of the lesson (*see* para 1).

7. The instructor should take post as No. 1 and explain that the gun is already laid to engage a target.

Controlled corrections (direction)

8. State that normally a correction for direction is given as a new direction right or left of zero. When correcting on the observed strike of the bullets, however, the group commander may give the corrections as a cumulative order.

9. Order "**Fire**" and demonstrate that on the order "**Stop.....degrees.....minutes, Right (or left) of zero,**" the No. 1 will set the new switch on the dial and deflection drums without reference to the reading already on the sight. He will then tap the gun until the lensatic sight is laid on the aiming post, re-level the bubble and report "**On**"

10. Practise the squad.

11. Demonstrate that if the order was "**Stop, Right (or left).....degrees.....minutes,**" the No. 1 would add the amount to the reading on the appropriate deflection drum and carry on as already taught.

12. Practise the squad.

Corrections for direction and elevation

13. State that occasionally a correction may be necessary for both direction and elevation.

14. Demonstrate that on the order "**Stop Right (or left).....degrees.....minutes, Up (or down).....hundred,**" the No. 1 will set his dial sight accordingly and tap the gun until the lensatic sight is on the aiming post. He will then re-level the bubble check again for direction and report "**On**"

15. Practise the squad in corrections for direction and elevation.

Conclusion

16. Questions from the squad.
17. Further practice for backward men.
18. Sum up main points.

Note

19. The instructor must ensure that the squad reach a high standard of handling the dial sight before teaching Indirect Fire Drill.

LESSON 58—EMERGENCY ACTION

A INSTRUCTOR'S NOTES

Aim

1. To teach the gun team how to engage opportunity targets when on the carrier.
2. To teach the signals used for the control of carriers.

Class and instructors

3. Squads under squad instructors. If possible all squads should work in the same area controlled by a supervising officer. Carrier drivers are required for this lesson.

Periods

4. One 45-minute period.

Stores

5. Gun carrier complete with drill stores.

Preparation

6. Four or five men will be required to represent targets. They should be concealed around the training area and instructed to stand up in the open when signalled to do so by the supervising officer. The supervising officer should arrange a system of signals.

B CONDUCT OF LESSON

Approach

7. Give the aim of the lesson (*see* para 1 above).

Emergency action

8. Detail a gun team, order "Fall In" and "Mount" and explain that whenever the carrier is on the move, each gun number is responsible for watching a certain arc. No. 1 will watch the front and Nos. 2 and 3 their own flanks and the rear. If any member of the gun team sees a target within his arc, he will report "Target front" "Target left," "Target right," or "Target rear," the direction being in relation to the carrier itself.

9. State that when a target is reported, the No. 1 will order "Stop"

10. Tell the gun team to carry out the following actions as they are detailed:—

The No. 2 will release the emergency mounting, lower the travelling stay and pass the gun to the number who is best placed to engage the target. The firer will then take the gun, load and fire. When the target has been engaged, he will unload and order "Drive on" The No. 2 will then connect the gun to the travelling stay.

11. Emphasize the following points:—

- (a) The gun will not be loaded while travelling. If the belt has been partly used, it will be passed through the feedblock to assist in quick loading.
- (b) The gun number who sees the target must be prepared to indicate it to the firer.
- (c) Personnel not firing will keep below the armour, but will be prepared to help in maintaining the gun in action.
- (d) When the gun is on the emergency mounting, the traversing clamp must always be loose.

12. Practise the squad in engaging targets, first with the carrier moving slowly and then with the carrier at speed.

Carrier signals

13. State that these signals are used to control carriers on the move. The following signals are the minimum required to ensure control. Additional ones can be added if required for particular circumstances.

Demonstrate these signals:—

- | | |
|---------------|-------------------------------------|
| "Close on me" | Yellow flag flown. |
| "Follow me" | Yellow and green flags flown. |
| "Stop" | Red flag flown. |
| "Deploy" | Green flag waved from side to side. |

All signals will be acknowledged by each carrier.

14. Practise the squad in identifying signals.

Conclusion

15. Questions to and from the squad.
16. Sum up main points of emergency action.

LESSON 59—PREPARE FOR CARRIER ACTION

A INSTRUCTOR'S NOTES

Aim

1. To teach the gun team to prepare the carrier for carrier action.

Class and instructors

2. Squads under squad instructors, assembled in single rank on one flank of the carrier. Carrier drivers will be required.

Periods

3. One 45-minute period.

Stores

4. One gun carrier complete with drill stores.

Preparation

5. All stores correctly placed in the carrier.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above). State that the drill to be taught is used when it is necessary to change from the emergency mounting to the crosshead mounting before coming into action in a hull down position.

"Prepare for carrier action"

8. Detail a gun team and order "Fall in" and "Mount"

9. The instructor should now detail the drill and order the gun numbers to carry it out stage by stage. Tell the squad that when the No. 1 is informed that carrier action is to be employed he will order "Carrier Action"

The No. 1 will then:—

- (a) Disconnect the carrier condenser tube from the gun.
- (b) Remove the crosshead from the tripod and place it in the carrier socket with the elevating gear to the gear.
- (c) When the gun has been mounted, attach the ground mounting condenser tube.

The No. 2 will:—

- (a) Remove the crosshead and elevating joint pins.
- (b) Dismount the gun, place it, muzzle forward, on the left side of the engine cowling.
- (c) Mount the gun on the crosshead and insert the pins.
- (d) Swing the gun round until it points over the rear right corner of the carrier.

The No. 3 will:—

- (a) Remove the liner from the emergency mounting.
- (b) Lower the travelling stay and remove the emergency mounting, placing it across the rear of the engine cowling.
- (c) Tighten the traversing clamp, when the gun has been swung around.
- (d) Prepare a belt of ammunition.
- (e) Unscrew the cap of the condenser can and insert the ground mounting condenser tube.

10. Tell the squad that the gun team will automatically change back to the emergency mounting after "Cease firing" is ordered. The actions of preparing for carrier action are simply reversed.

11. Practise the squad in preparing for carrier action with the carrier stationary.

12. Practise the squad with the carrier on the move first slowly and then at speed.

Conclusion

13. Questions from the squad.

14. Sum up main points.

LESSON 60—TESTS OF ELEMENTARY TRAINING

Aim

1. The following tests have been devised to assist officers in testing the efficiency of their men in elementary training. It is important that these tests should not be considered solely as competitions against time, for although speed is necessary, accuracy is the first essential. No man should therefore be passed as efficient unless all the points are correctly carried out, even though he may complete them in the standard time. Men who, whilst passing the tests for accuracy slightly exceed the standard time, should be tested again before being put back for further instruction.

Notes for testing officers

2. The tests will be carried out in strict accordance with the detailed instructions given under the appropriate lessons, for unless the smallest details are insisted upon, the time limit will not be applicable. In carrying out tests time can be saved if the first detachment complete Tests 1 to 4 consecutively; the remainder can be carried out as convenient.

3. It should be noted in Tests 1, 2, 3 and 4 that numbers are being tested in their own particular duties as No. 1 or No. 2, and the tests should not be regarded as a test of the No. 1 only. Therefore, a man is not considered to have passed these tests until he has passed in the duties of both numbers.

4. It is essential for each man to have passed all tests before proceeding with the machine gun course.

5. The conditions of the test will be carefully explained before the test begins, including the time allowed, and when the time allowance begins and finishes. A timekeeper will be appointed. A stop watch should be used if available.

Stores required:—As laid down in the appropriate lessons. DP guns must be used for Tests 9, 10 and 11. In no circumstances will service guns be used.

Name of test 1	Conditions before test 2	Number of tests 3	Time allowed 4	To pass 5	Remarks 6
No. 1 Mount gun. (From carrier).	Nos. 1, 2 and 3. "Fall in"—"Mount." The Carrier to be not more than 8 yards from the place where the gun is to be mounted	One	50 seconds from command "Gun" until all Nos. are still	All points of gun drill correct.	All numbers to be correctly seated in carrier. Carrier condenser tube to be attached to gun. No. 3 to return to a position immediately in front of carrier
No. 1A Mount gun. (From the ground).	Nos. 1, 2 and 3 beside their stores. Stores laid out not more than 5 yards from the place where the gun is to be mounted	One	25 seconds from command "Gun" until all Nos. are still	All points of gun drills correct	
No. 2 Load	Gun mounted. Belt packed in the liner. Nos. 1 and 2 take post	One	5 seconds from the command "Load" until No. 1 has got correct holding	Gun correctly loaded	
No. 3 Unload	Gun mounted and loaded Nos. 1 and 2, take post.	One	5 seconds from the command "Unload" until belt is correctly packed in liner	Gun correctly unloaded	
No. 4 Dis-mount gun. (On to carrier).	Gun mounted. Nos. 1, 2 and 3, take post.	One	40 seconds from the command "Gun" until all Nos. are still	All points of gun drill correct	
No. 4A Dis-mount gun	Gun mounted. Nos. 1, 2 and 3, take post	One	20 seconds from the command "Gun" until all Nos. are still	All points of gun drill correct	
No. 5 To adjust the sights and lay the gun	The gun will be loaded. Three targets will be pointed out. Target sight lowered and set at any range. Nos. 1 and 2 take post	Three	12 seconds from the range being ordered until No. 2 holds up his hand	Sight set correctly and the aim accurate	No. 1 will not be informed of the order in which the targets will be given out. Different ranges will be ordered for each target

Name of test 1	Conditions before test 2	Number of tests 3	Time allowed 4	To pass 5	Remarks 6
No. 6 Traversing	Gun mounted 25 yds from the MG target and loaded. No. 1 will be given an opportunity to test his clamp, but the MG target will not be used for this purpose. Nos. 1 and 2, take post	Two	No time limit imposed	When checked at any time to be within 15' for direction. Elevation to be correct	The test consists of traversing from right to left and from left to right. A complete row of oblique bulls will be traversed in each case. The order "STOP" will be given once, but not before the centre of the traverse has been reached. The aim will be checked after the order "STOP" and again when the end of the traverse is reached. Tapping back to correct errors is not allowed.
No. 7 Controlled corrections:— (a) Direct fire	Gun mounted, loaded, and laid on a target. Nos. 1 and 2, take post	Three	8 seconds from the command "Hundred" until No. 1 presses the thumb-piece	Sight correctly adjusted and correctly laid	Corrections up or down will not exceed 300 yards
(b) Indirect fire (Elevation)	Gun mounted and loaded, dial sight attached, aiming post put out. Range drum set at any range. Angle of sight drum at zero. The bubble will be central and a correct aim laid on the aiming post. Nos. 1 and 2, take post.	Three	12 seconds from the command "Hundred" until No. 1 has pressed the thumb-piece	Correct setting of the range drum and the bubble level to within 2 minutes	Corrections up or down will not exceed 300 yards. The error in levelling the bubble will be ascertained by using the angle of sight drum
(c) Indirect fire (Deflection)	As in (b). Deflection drums and dial to be at zero at the beginning of each of the three tests	Three	15 seconds from the command "Minutes" or "Zero" until No. 1 has retained his holding	Correct setting on deflection drums. Bubble central to within 2 minutes. Aim correctly re-laid on aiming post	Corrections right or left will not exceed 4 degrees, and will always include tens of minutes. Bubble checked by angle of sight drum. Two switches will be from zero and one cumulative

Name of test 1	Conditions before test 2	Number of tests 3	Time allowed 4	To pass 5	Remarks 6
No. 8. Laying the gun for elevation, indirect	Gun mounted, dial sight attached. All drums and deflection dial set at zero. Gun approximately level	Three	15 seconds from the command "Hundred," until No. 1 has retained his holding	Correct setting on the range and angle of sight drums. Bubble level to within 2 minutes	Ranges ordered will be between 1,200 and 2,000 yds. Angle of sight of not more than 1 degree plus or minus will be ordered, and will include 5 minutes. In order that the time taken to give out the order will not interfere with the time allowed for the test, the angle of sight will be given immediately after the range
No. 9 Immediate action	4 guns will be mounted about 3 yds apart. Stoppages set up, crank handles covered and the guns laid off the aiming mark. The NCO at each gun will have a spare lock and clearing plug. One stoppage in each position will be set up. Special stoppages not to be included. <i>Note.</i> —The testing NCO to act as No. 2	One. (Carry out immediate action on 4 guns)	No time limit imposed. Average time used in assessing points (<i>see</i> remarks)	Not less than 60 points	The test consists of rectifying the stoppage of all 4 guns in turn. No. 1 being tested will be warned that when he has carried out the immediate action on a gun, he will immediately double to the next gun, until the last gun is reached. Time taken will be from the command "Go" until the testing NCO calls "Up," when the immediate action is complete on the last gun. The time taken by each individual is recorded and the average time worked out and points awarded as follows:—For every 5 seconds or part of 5 seconds below the average time add 1 point to points gained in immediate action. For 5 seconds or part of 5 seconds above the average time deduct 1 point. Total points awarded for correct immediate action carried out on each gun—20.

Name of test 1	Conditions before test 2	Number of tests 3	Time allowed 4	To pass 5	Remarks 6
No. 9 Immediate action— <i>continued</i>					<p>Deductions:— Totally incorrect : 20 points Partially incorrect : 5 Guns not read : 5 Incorrect aim : 2 Minor errors : 2 Not changing lock : 10 when required : 10</p> <p>The gun will be stripped down until the barrel has been removed and then assembled. The lock, feed-block and component parts will not be stripped</p> <p>The lock will be stripped down until the sear is removed and then reassembled. The gib will not be stripped.</p>
No. 10 Stripping and assembling the gun	Gun mounted with tools ready. No. 1 seated behind the gun	One	2 minutes 10 sec'ds from command "Go" until No. 1 presses the thumb-piece	Stripped and assembled in the correct sequence and the correct manner	
No. 11 Stripping and assembling the lock	Lock out of the gun with punch and T fixing pin at hand	One	1 minute 40 sec'ds from command "Go" until the lock is cocked	Stripped and assembled in the correct sequence	

CHAPTER 11

ADVANCED MACHINE GUN HANDLING

INTRODUCTORY NOTES

1. The lessons contained in this chapter provide an essential link between gun drill and field training. In that, the soldier is taught to adopt the drill he has already learnt to active service conditions, and to combine fieldcraft with speed and accuracy in handling the gun.

2. These lessons should normally be taught to the soldier after he has passed the tests of elementary training.

3. During these lessons all stores should be at service weights.

LESSON 61—MANHANDLING OF LOADS—SHORT CARRY

A INSTRUCTOR'S NOTES

Aim

1. To show the soldier various methods of carrying machine gun stores into action or crawling with them across exposed ground.

Class and instructors

2. Squads under squad instructors.

Periods

3. One 45-minute period.

Stores

4. Gun, tripod, condenser can and tube, dial sight, spare parts case and six liners.

Preparation

5. All stores will be at service weights, *i.e.*, barrel casing filled and liner weighted with stones etc.

Dress and equipment

6. Battle order. Stens and rifles.

B. CONDUCT OF LESSON

Approach

7. Give the aim of the lesson (*see* para 1 above). On occasions it may be necessary for the gun team to carry the gun and stores across exposed ground. Any comfortable method may be adopted, provided it does no damage to stores and does not give away to the enemy the fact that a machine gun is coming into action. The methods given below are suggested.

Tripod

8. Demonstrate that the tripod can be carried, walking or doubling, folded under the arm or in front of the body. It can also be carried on the back with the front leg over each shoulder. In this case, a liner can be slung over each front leg.

9. Demonstrate that when crawling, the tripod can be dragged along by the rear leg. Care must be taken not to damage the dial.

10. Practise the squad.

The gun

11. Show the methods of carrying the gun when walking or doubling. It can be carried across the body with the barrel casing on the right forearm and with the left hand gripping the traversing handle and the free end of the condenser tube. Alternatively it can be carried at the short trail grasping the crosshead bracket with the right hand.

12. Demonstrate that when crawling, the No. 2 can lie on his right side with the weight of his body supported by his right arm, and with the right knee bent. He can rest the breech casing on his right thigh and hold the barrel casing with his left arm. He can then crawl forward using his right elbow and left leg. The sliding shutter will be closed.

13. Practise squad.

Liners and condenser can

14. State that for short distances the maximum load is two liners and the condenser can, or four liners. They may be carried with two liners in one hand and two liners or the condenser can in the other. A further method is to pass a strap or rope through the handles of the liners and sling them over the shoulder.

15. Demonstrate a convenient method of crawling. The handle of a liner may be hung over the toe of each boot. The No. 3 can then crawl on his side pulling the condenser can with one hand and the liners with his feet. Another method is for the No. 3 to push the liners and condenser can forward in front of himself.

16. Practise squad.

Two-man load

17. State that if it is required to move a gun which has already been mounted to a new position a short distance away, it can be done by two men.

18. With the aid of one of the squad demonstrate that the stores are lifted.—

by the No. 1 with the right hand on the rear leg and his left hand holding two liners on the left front leg.

by the No. 2 with his left hand on the right front leg and the condenser can in his right hand. Before moving the gun in this fashion, it *must* be unloaded.

19. Again with the aid of one of the squad demonstrate that the gun when mounted can be dragged along by the No. 1 and 2 crawling and grasping the front legs.

20. Practise the squad in two-man loads.

Conclusion

21. Questions from the squad.
22. Sum up main points.

LESSON 62—MOUNTING THE GUN ON EXPOSED GROUND A INSTRUCTOR'S NOTES

Aim

1. To teach the soldier how to mount the gun in the lowest position.

Class and instructors

2. Squads under squad instructors.

Periods

3. One 45-minute period.

Stores

4. Gun, tripod, condenser can and tube, dial sight, spare parts case and two liners.

Preparation

5. All stores will be at service weights.

B CONDUCT OF LESSON

Approach

6. Give the aim of the lesson (*see* para 1 above). State that the mounting used during drills is not always the most suitable under active service conditions, owing to the necessity for concealment and the unevenness of the ground.

7. Demonstrate the method of adjusting the tripod to the lowest position. The No. 1 keeping himself as low as possible, and lying on the left of the tripod, will loosen the front legs, and by leaning the tripod first to one side and then the other, will open the legs until all three are flat on the ground. Then, holding the rear leg on the ground with the inside of his right knee, he will loosen the jamming handle of the rear leg and close the rear leg to the socket by pulling the socket to the rear. He will then move the socket one tooth on the rear leg clutch plates and tighten the rear leg jamming handle. Next the front legs are brought upwards and to the rear and tightened over the rear leg.

8. Recondition the tripod and practise the squad in setting it for the lowest position.

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PLATE 10—Mounting the gun in the lowest service position.

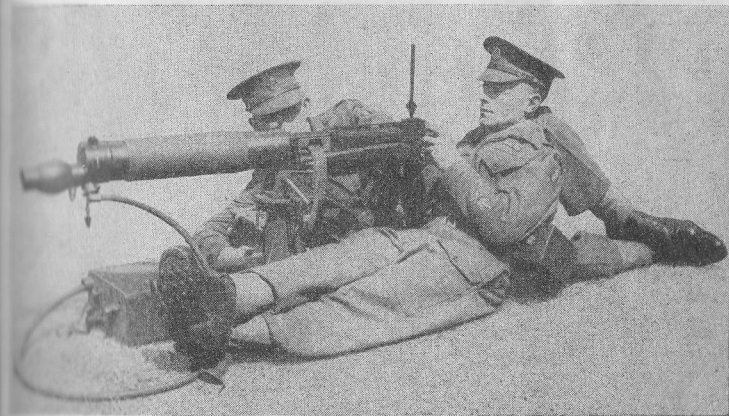


PLATE No. 11—Gun mounted in lowest service position.



PLATE 12—Gun mounted behind low cover.



PLATE 13—Firing through a hedgerow.

Mount gun," Duties of the No. 1

9. Explain with the No. 1 practising, that when "Mount gun" is ordered, he will adjust the tripod as in para 7 and will then crawl forward with the tripod on his right to the gun position, and lying on his left side he will release the front legs and raise the socket until it is upright, and then clamp up the front legs. Finally he will remove the elevating and crosshead joint pins, and remain lying on his left side with his head to the front.

10. Order No. 1 to rest and detail a No. 2.

Mount gun," Duties of No. 2

11. Explain with the No. 2 practising, that he will close the sliding shutter and crawl forward with the gun, timing himself to arrive at the position when No. 1 has mounted the tripod. He will then open the sliding shutter and, assisted by the No. 1, place the gun on the tripod. The No. 1 will insert the crosshead joint pin and the No. 2 the elevating joint pin. The No. 1 will then swing round, keeping as low as possible, and lie on his back with his legs to the front, right leg crossed over the left, and the No. 2 will lie on his right side supporting the No. 1 in the back with his right thigh and at the neck with his left knee.

Mount gun," Duties of No. 3

12. State that the No. 3 will act as in gun drill, except that he will crawl, and when behind the Nos. 1 and 2, he will pass his kit to the No. 2 to put into position, and will then crawl away to a position in rear.

13. Detail a No. 3 to carry out his duties in "Mount gun."

Dismount gun "

14. Tell the squad that on the order "Dismount gun" the gun can either be dragged back on the tripod by the No. 1 and 2 and dismounted under cover, or the gun can be removed by the No. 2 and the tripod dragged back by the No. 1. The No. 3 will act as in gun drill except that he will crawl.

15. Order "Dismount gun"

16. Practise the squad in mounting and dismounting the gun in the lowest position.

Conclusion

17. Questions from the squad.
18. Further practice if necessary.
19. Sum up main points.

LESSON 63—MOUNTING THE GUN ON UNEVEN GROUND A INSTRUCTOR'S NOTES

1. To teach the soldier how to mount the gun on sloping ground and behind various types of cover.

Class and instructors

2. Squads under squad instructors.

Periods

3. One 45-minute period.

Stores

4. Gun, tripod, condenser can and tube, dial sight, spare parts case and two liners.

Ground

5. An area of rough broken ground should be selected for this lesson.

B CONDUCT OF LESSON**Approach**

6. Give the aim of the lesson (*see* para 1 above).

Mounting the gun on uneven ground

7. Mount the tripod correctly on a piece of uneven ground. Withdraw it and place it on level ground, so that the squad can see how the legs could be adjusted beforehand to suit the ground on which the gun is to be mounted.

8. Select another piece of ground and mount the tripod behind cover with the legs set to fit the ground. Then move the tripod into position and make final adjustments to correct the mounting.

9. Point out that when the gun is mounted the following conditions must be fulfilled:—

- (a) The mounting must be as low as possible consistent with obtaining a view of the arc of fire and the target.
- (b) The position of the rear leg is governed by the shape of the ground irrespective of the direction in which the gun has to fire. When mounted on a steep slope the rear leg should be pointing down the slope.
- (c) The socket must be mounted upright, and over the spot indicated.
- (d) The shoes only, and not the legs, must be bearing on the ground. (The entrenching tool may be used to remove any obstruction.)
- (e) The ground supporting each shoe must be sufficiently firm to ensure that the shoes do not slip during firing.
- (f) No part of the tripod must interfere with the elevating wheel, it covering the arc of fire.
- (g) The gun numbers must adopt positions which conform with the ground and avoid unnecessary exposure.

10. Practise the squad in mounting the gun on uneven ground.

11. Explain and demonstrate and then practise the squad in mounting the gun in the following positions:—

- (a) On the side of a slope.
- (b) On the top of a narrow bank—with the aim of obtaining maximum command.
- (c) On the side of a bank with the barrel casing just clearing the top.
- (d) In a hedgerow.
- (e) In a shell hole or similar depression.

Conclusion

12. Questions from the squad.
13. Sum up main points (*see* para 9).

LESSON 64—BRINGING THE GUN INTO ACTION MAKING USE OF COVER**A INSTRUCTOR'S NOTES****Aim**

1. To teach the gun team how to bring the gun into action with the minimum exposure to enemy observation and the maximum cover from fire.

Class and instructors

2. Squads under squad instructors.

Periods

3. One 45-minute period.

Stores

4. Gun, tripod, condenser can and tube, dial sight, spare parts case and six liners, one gun flag.

Preparation

5. The instructor must decide on:—
 - (a) An arc of fire and a target.
 - (b) The gun position.
 - (c) The ground from which the enemy can observe the gun position.
 - (d) The section rendezvous.

Ground

6. An area of broken ground is required for this lesson.

Dress and equipment

7. Battle order with stens and rifles.

B CONDUCT OF LESSON

Approach

8. Give the aim of the lesson (*see* para 1 above).
9. Explain the normal method by which a section commander brings his guns into action:—

The section is led to the section RV by the senior No. 1. There, it is met by the section commander's driver mechanic who orders "**Dismounted action**" and directs the Nos. 1 up to the section commander. The section commander signals up both Nos. 1 and indicates each gun position and the direction in which the guns will point. If the guns arrive in the section area at different times, he gives orders to each No. 1 in turn. The section commander then controls the higher numbers coming into action. When the guns are mounted, he organizes the arc of fire and gives a fire order.

10. Stress that good team work within the section is essential. It is only when all members of the section work in complete harmony with the section commander and with each other that a high degree of efficiency is obtained.

Bring the gun into action

11. Paint a very simple tactical picture, for example:—
"The enemy are holding the high ground there. Our troops are held up there and there. The section has been ordered to support an attack by covering fire onto there."
12. Detail a gun team and send them to the section RV. Send the remaining members of the squad to a position in the relative direction of the enemy to observe and report all movements seen. Despatch one of the squad back to the RV to order "Dismounted action" and send up the No. 1.
13. The instructor will act as section commander and control the gun team getting into action. When they are in action, he will organize the arc of fire and engage the target.
14. Call in the spare members of the squad and let them inspect the gun position. Describe how the gun team got into action, and get the observers to report on what they saw.
15. Discuss the positions of the various gun numbers as follows:—
No. 1—With regard to concealment and freedom of action.
No. 2—With regard to concealment, ability to observe the section commander's signals and ability to carry out his duties at the gun.
No. 3—With regard to concealment, local protection and ability to maintain ammunition supply.
16. Fall out the gun team and discuss:—
(a) The move forward of the gun numbers with regard to concealment and speed.
(b) The method of mounting the gun.
(c) The suitability of the mounting for the gun position.
(d) The ability of the gun to do its task.
(e) The position of the stores at the gun.
(f) How the gun position can be improved by digging and camouflage.

17. Practise the squad in coming into action on various types of ground.

18. Stress that six unused liners must always be maintained in the gun position.

Conclusion

19. Questions from the squad.
20. Sum up main points.

LESSON 65—BRINGING THE CARRIER INTO A HULL-DOWN POSITION

A INSTRUCTOR'S NOTES

Aim

1. To teach the gun team how to bring a carrier into action in a hull-down position.

Class and instructors

2. Squads under squad instructors. Carrier drivers are required for this lesson.

Periods

3. One 45-minute period.

Stores

4. One gun carrier complete with drill stores. One gun flag.

Preparation

5. The instructor must select:—
(a) A target.
(b) The carrier position.
(c) The position of the enemy.
(d) A section RV.

6. A gun flag should be placed out to indicate the approximate carrier position.

Ground

7. A suitable area for a hull-down position must be chosen.

Arms and equipment

8. Battle order.

B CONDUCT OF LESSON

Revision

9. Detail a gun team, and order "Prepare for Carrier Action" When the gun has been prepared, order the gun team to fall out.

Approach

10. Give the aim of the lesson (*see* para 1 above), and state that carrier action is normally employed when there is only one target to engage, when speed into action is essential and when the ground is suitable.

Hull-down position

11. The instructor should represent No. 1 and control the driver while he backs the carrier into a hull-down position. Let the squad view this and point out:—

- (a) That the gun can engage the target.
- (b) That only the barrel casing and the No. 1's head are exposed above the crest.
- (c) That the right rear corner of the carrier is facing the target.

This ensures that the No. 1 is in a comfortable position to fire the gun and gives the No. 1 the maximum protection from fire.

Coming into action

12. Explain the normal method by which the section commander brings his carrier into action:—

He selects the approximate carrier positions and marks these with gun flags. The section is brought up to the section RV by the senior No. 1 and prepares for carrier action on the move up. On arrival at the section RV, the section commander's driver meets the No.'s 1 and directs them up to the section commander on foot.

The section commander tells the No.'s 1:—

- (a) The target.
- (b) Estimated range.
- (c) Approximate carrier positions.

The No.'s 1 then double back to the position where they intend to turn their carriers and signal them up. When the carrier arrives the No. 1 turns it round and mounts. The No. 3 dismounts, doubles off and lies down facing a flank. The No. 1 then, by signals and orders to his driver, backs his carrier towards the gun flag. When doing this, he observes his target at gun height and orders the driver to stop when correct hull-down position is reached.

13. Detail a gun team and order "Fall in" and "Mount" Order them to change back to the emergency mounting send the gun team back to the section RV, and tell the No. 1 to order "Prepare for Carrier Action"

14. Send one of the squad as section commander's driver to order up the No. 1 on foot. The instructor will then represent the section commander and control the gun team coming into action. When they are in action, he should order "Load" and engage the target.

15. Let the remainder of the squad view the carrier position. Fall out the gun team and get the squad to discuss and criticize their actions. Particular attention should be paid to the following points:—

- (a) The selection of the position for turning the carrier.
- (b) The control of the carrier by the No. 1 and the reactions of the driver.
- (c) Whether the position is hull-down and whether the gun can do its task.

16. Practise the squad in coming into carrier action.

Conclusion

17. Questions from the squad.
18. Sum up the sequence of coming into action.

CHAPTER 12

VISUAL TRAINING

INTRODUCTORY NOTES

System of training

1. The methods taught in Infantry Training Pamphlet No. 2, Fieldcraft (All Arms), Chapter I must be the groundwork of the machine-gunner's visual training. Owing to the fact that machine guns are fired at longer ranges than other small arms and to the closer grouping of the weapon, even minor inaccuracies in indication and recognition may result in the target being missed. Further, it is often necessary to fire machine guns under conditions in which any inaccuracy might endanger our own troops. For these reasons, the methods taught in Infantry Training Pamphlet No. 2 are amplified here.

Standard of training

2. The following standard of training must be reached:—

- (a) Officers, NCOs and rangetakers must be capable of:—
 - (i) Organizing an arc of fire.
 - (ii) Using range-cards.
 - (iii) A high standard of indication.
 - (iv) Issuing fire orders.
 - (v) Judging distances up to 2,000 yards.
- (b) Gun numbers must be capable of:—
 - (i) Recognizing rapidly and accurately any target indicated.
 - (ii) Indication of simple targets.
 - (iii) Applying fire orders.
 - (iv) Judging distances up to 1,000 yards.

Indication and recognition

3. The method of teaching indication and recognition and the organization of an arc of fire, to officers, NCOs and rangetakers is given in Lesson 66 of this pamphlet.

The method of teaching recognition and simple indication to gun numbers will be found in Infantry Training Pamphlet No. 2, Lesson 2.

It should be noted that the fingers-breadth and hand-span method is not sufficiently accurate for machine gun fire control and is replaced by the degree measurement method.

All gun numbers must know how to measure degrees by hand angles and should check their own personal hand angles at frequent intervals.

Instruction in recognition must only be given by NCOs who have reached a high standard in indication.

Judging distance

5. The method of teaching judging distance is given in Infantry Training Pamphlet No. 2, Lessons 4, 5 and 6.

6. Officers, NCOs and rangetakers should be required to pass the following test:—

- (a) Judge the distance to two objects, both between 600 and 1,000 yards
- (b) Key range two objects not more than 1,000 yards away and not more than 300 yards from a known range.
- (c) Key range two objects between 1,500 and 2,000 yards but not more than 300 yards from known ranges.

For test (a) the error should not exceed 50 yards.

" " (b) " " " " " 100 yards.

" " (c) " " " " " 150 yards.

Five out of the six ranges must be within the permissible error.

7. Gun numbers should be required to pass tests (a) and (b) only. Three out of the four ranges must be within the permissible error.

Fire orders

8. The method of teaching the issue of fire orders is given in Lesson 97 of this pamphlet.

9. The method of teaching the application of fire orders is given in Lesson 55 of this pamphlet.

LESSON 66—INDICATION AND RECOGNITION

A INSTRUCTOR'S NOTES

Aim

1. To teach how to indicate and recognize targets accurately and rapidly.
2. To teach how to organize an arc of fire.

Class and instructors

3. The lecture should be given by an officer to a class not exceeding 30. The practical period should be taught by squad instructors.

Periods

4. One 45-minute lecture.
One 45-minute period for practice.

Stores

5. For lecture:—Blackboard and chalks, landscape target and pointer staff.

For practical period:—Gun, tripod, director, pointer staff and hand-angle scale.

Preparation

6. For lecture:—Draw diagrams to illustrate clock ray, use of reference points and auxiliary reference points and degree measurement. Draw right and left of arc and near limit on landscape target.

For practical period:—Gun and tripod mounted. Select suitable targets and reference points.

Equipment

7. Class to have binoculars.

B CONDUCT OF LESSON

Approach

8. Give the aim of the lesson and emphasize the importance of a high standard of indication and recognition in machine gun fire control.

Organization of the arc of fire

9. State that an arc of fire is an area of ground over which it is desired that the guns can bring fire to bear from a given position.

10. Using the landscape target, explain that the arc is defined by a "Right of arc" and a "Left of arc" which are imaginary lines passing through easily identified objects in the landscape on the right and left of the arc.

11. Using the landscape target, explain that on occasion a "Near limit" is indicated. This implies that only the ground beyond this line and within the arc need be considered.

12. Ensure that the class know what reference points are. State that reference points will be given short definite names by which they can be rapidly recognized by all gun members.

Reference points should not be on the right or left of arc, the near limit nor the sky-line.

13. Demonstrate on the landscape target how to organize an arc of fire. It is usually done as follows:—

"Look to your front.

Half right a large wood—right edge, Right of arc.

Half left a prominent red house—Left edge, Left of Arc.

Near Limit—the river running across the front.

Reference points:—

Centre of arc—a church—right bottom corner known as **CHURCH**.
Quarter left, two poplars—right poplar known as **POPLAR**.

Preliminaries to indication

14. Tell the squad that the fire controller, before indicating a target, will decide on:—

- (a) What he is going to call it, *ie*, what the target looks like to the naked eye. A fence may look like a dark strip, a red house in the distance may look black.
- (b) The simplest, quickest and most certain method of indication.

Direct indication

15. State that whenever possible, the gun itself should be laid on the target to be indicated. If the situation allows it, this is the most efficient method of indication.

Alternatively an instrument such as a director or pointer staff may be used. If the object to be indicated is unmistakable, the approximate right, centre or left of arc can be of great assistance to denote a general direction.

eg, "Right of arc—white house."

"Centre of arc—bright yellow patch."

Reference and auxiliary reference points

16. Show how to indicate targets using reference points. State that auxiliary reference points may be used in conjunction with reference points, to indicate difficult targets. They should be easily recognizable and should be close to the target to be engaged.

17. Tell the squad that the last target may be used as an auxiliary reference point if it is near to the new target.

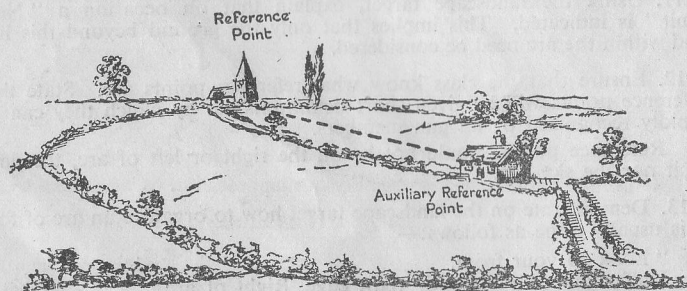


FIG 7

Clock ray method

18. Make sure that the class are conversant with the clock ray method (*see* Infantry Training Pamphlet No. 2, Lesson 2).

Degree measurement

19. Explain that the distance in degrees from a reference point or auxiliary reference point to the target may be of great assistance in indicating a difficult target. The distance in degrees can be measured with the graticules of the binoculars or by hand angles by the fire controller, but the gun numbers can only measure by hand angles. Individual hand angles should be determined in all service positions, *ie*, standing, sitting or lying down.

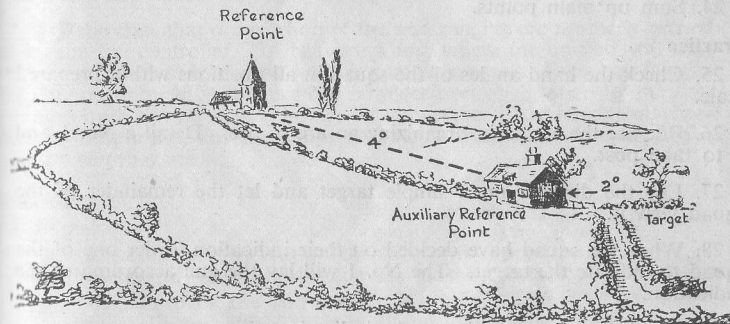


FIG 8

Targets with width

20. State that when indicating a target with width, the words "Right limit" and "Left limit" will be used to indicate the extent of the target.

Example

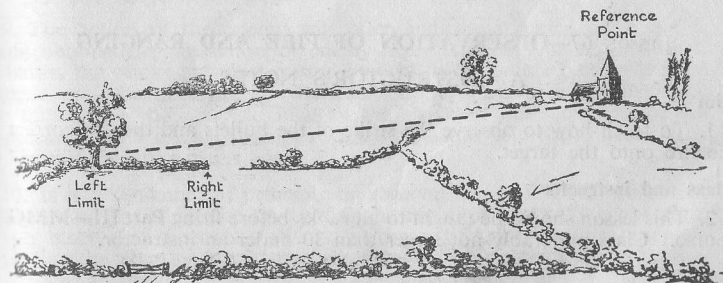


FIG 9

Depth targets

21. Tell the squad that with depth targets, the "Near end" and "Far end" are indicated in a similar manner to that shown in para 20.

Failure to recognize the target

23. State that if the No. 1 fails to recognize the target, he will report "Again". The fire controller must then decide whether the No. 1 did not hear the order or whether he failed to understand it. If the fire controller considers the No. 1 failed to understand the indication, he must indicate the target again by a different method.

23. Questions from the class.

24. Sum up main points.

Practice

25. Check the hand angles of the squad in all positions with a prepared scale.

26. Practise the squad in organizing an arc of fire. Detail a No. 1 and 2 to take post.

27. Lay the director on a simple target and let the remainder of the squad view it.

28. When the squad have decided on their indication, order one of the squad to indicate the target. The No. 1 will lay the gun according to the indication.

29. Check the aim and discuss the indication given.

30. Practise the squad as above with all types of targets. The targets selected should be such as to employ the various methods of indication.

Conclusion

31. Questions from the squad.

32. Sum up main points and discuss progress.

LESSON 67—OBSERVATION OF FIRE AND RANGING

A INSTRUCTOR'S NOTES

Aim

1. To teach how to observe the strike of the bullets and then to correct the fire onto the target.

Class and instructor

2. This lesson should be taught to all ranks before firing Part III—MMG course. Class preferably not larger than 30 under an instructor.

Periods

3. One 45-minute lecture.

Stores

4. Blackboard and chalk.

Preparation

5. Draw the diagrams given in the text of the lesson on the blackboard.

B CONDUCT OF LESSON

Approach

6. Give the aim of the lesson (see para 1 above). State that observation of fire means the estimation, by the strike of the bullets, of the position of the beaten zone in reference to the target. Ranging means the correction to elevation and direction required to lay the beaten zone on the target.

7. Tell the class that observation of fire and ranging are normally carried out by the fire controller. In heavy fighting, where the unit control may break down, control by the firer will become necessary. Except in favourable circumstances little reliance can be placed on observation by the firer at ranges over 800 yards. Although the rangetaker and fire controller are primarily responsible for observing fire, all numbers should report strike as and when they see it.

Observation of fire

8. Explain:—

The possibility of observation of strike will depend on a variety of factors of which the following are the most important:—

- (a) The nature of the soil around the target. Sand, dry plough, water, short scrub, chalk subsoil and any powdery surface generally give good results, but damp ground, long grass, rocky country (except at short ranges) and undergrowth make observation more difficult.
- (b) Visibility as affected by light, mist or mirage.
- (c) The position of the sun; when the sun is low it is easier to pick up strike than when it is high.
- (d) Wind: A high wind tends to blow away the dust caused by the strike before it can be observed.
- (e) The range to the target.

9. The action of the enemy will often indicate whether fire effect is being obtained, *eg*, cessation of enemy fire. It should be realized that, in battle, the smoke and dust caused by artillery and mortar fire will often impede accurate observation. In addition, if other units are engaging the target, it is not easy to identify the strike of one's own guns; an appreciation of the time of flight of the bullets will help the fire controller to identify the strike of his guns.

10. It is a fundamental principle in observation of fire only to accept information that is definite or certain, and not to act on what is uncertain or no more than probable. Thus, before any deduction can be made regarding the exact position of a beaten zone with reference to the target, it is necessary to decide whether only a small portion of it is falling on the ground, which gives observation of strike, and, if so what portion of it.

In Fig 10 below, strike is observed on a sandy patch below the target. This may be the bottom of a beaten zone falling on the target or it may be the top of a beaten zone falling short of the target.

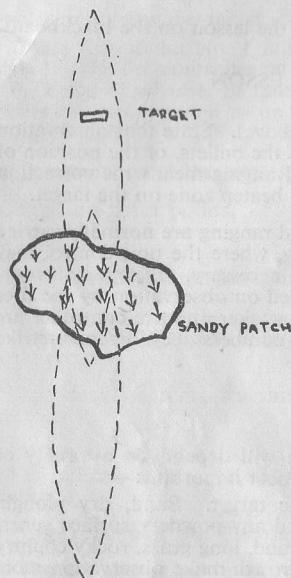


Fig 10

Ranging

15. Explain:—

It is required to bring the centres of the beaten zones into their correct positions on the target as soon as possible after the first burst. This task may entail corrections for elevation, or for direction, or both. The general principles to be observed are:—

- Only correct when it is certain that full fire effect is not being obtained.
- When making corrections, unless the correction required can be determined accurately, over estimate rather than under estimate. Always provided that the safety of our own troops allows it.

It should be appreciated, that when the target is on rising ground, the tendency will be to underestimate the corrections required. Where there is no guide to the amount of correction required, the fire controller should attempt to bracket the target, rather than creep towards it by a series of inadequate corrections.

- Corrections will always be given by the fire controller except when gun control has been ordered.

11. In the engagement of target with width or depth, the beaten zone of the guns of the fire units are distributed over the target according to the method of fire employed.

In these circumstances it is not possible always to determine that full fire effect has been obtained, owing to the difficulty of checking each individual beaten zone.

12. It may sometimes happen that an area of ground close to the target is specially suitable for observation.

In these circumstances it may result in quicker and more economical fire effect to direct the fire on to this area in the first instance, correcting it on to the target as soon as strike has been observed.

This method should not be adopted where the element of surprise fire is required.

13. Stress that when observing for strike, it is best to search an area around the target systematically, rather than look at the target.

14. Questions to and from the class

Corrections for line

16. State that observation of machine gun fire is usually carried out from a position near the guns. Corrections can therefore be measured accurately with binoculars or hand angles.

Corrections for elevation

17. It is rarely possible to estimate the exact amount by which the beaten zone is falling over or short of the target. When the whole of a beaten zone is seen, it will give a useful guide to the amount of correction necessary, as the length of beaten zones can be found in the range tables. For example, it might be estimated that the distance between the centre of the beaten zone and the target is twice the length of the beaten zone seen.

Displaced OP

18. When the observer is well to a flank of the guns, it must be appreciated that bullets which are falling over or short will appear to be falling right or left of the target. In these circumstances, to ascertain the actual position of the beaten zone with reference to the target, it is necessary to visualise the line guns-target and judge accordingly (see Fig 11 below).

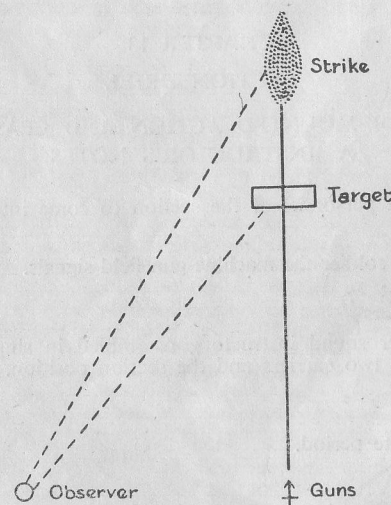


Fig 11

Reporting strike

19. State that strike will be reported to the fire-controller as follows:

- "Strike on target"
- "No strike"
- "Strike 100 yards short"
- "Strike 2 degrees left"
- "Strike 2 degrees right and 100 yards high."

20. Questions to and from the class on ranging.

Practice

21. With the limited amount of ammunition available for training practice in observation of fire and ranging cannot normally be carried out separately. Every opportunity should therefore be taken to practice fire with live ammunition.

Conclusion

- 22. Questions from the class.
- 23. Sum up main points.

CHAPTER 13

SECTION DRILL

LESSON 68—DISMOUNTED ACTION AND CEASE FIRING A INSTRUCTOR'S NOTES

Aim

- 1. To teach the personnel of the section to come into action and cease firing.
- 2. To teach the soldier the machine gun field signals.

Class and instructors

- 3. Squads under squad instructors, assembled in single rank on the flank between the two carriers and the section position.

Periods

- 4. One 45-minute period.

Stores

- 5. Section drill stores, *ie*, two carriers complete with guns, tripods, condenser cans and tubes, dial sights, spare parts cases, six liners *per* gun, spare parts box, aiming post. Belts with drill cartridges, and two gun flags.

Preparation

The two carriers will be drawn up side by side and about 15 yards apart. The spare parts box will be laid out in between the two carriers, representing its position on the section commander's carrier.

Gun stores should be loaded on the carriers, and the gun flags planted about 15 yards apart and 15 yards in front of the carriers. If wet, ground-boards should be placed out on the gun positions.

B CONDUCT OF LESSON

Eliminaries

- 1. Safety precautions.

Approach

- 2. Give the aim of the lesson (*see* paras 1 and 2 above).

Field signals

- 3. Demonstrate the following field signals to the squad:—

- (a) Senior NCO ... Right arm at angle of 45 degrees from the side.
- (b) All NCOs to report ... (a) above repeated several times

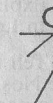
- (c) More ammunition required ... Right arm extended horizontally

- (d) Carriers to come forward ... Right arm at angle of 45 degrees from the side and left arm extended horizontally to the right of the body

- (e) Water required ... Right arm at angle of 45 degrees above the horizontal and left arm extended horizontally to the left of the body

- (f) Action ... Both arms fully extended raised from the side to a position level with the shoulders and lowered again—repeated several times rapidly

- (g) Cease firing ... Arm swung in circular motion in front of the body



(h) Prepare to fire ... Hand raised above the shoulder

(j) Fire ... Hand cut away to side

(k) Stop ... Arm waved horizontally across the body



10. Practise the squad in recognizing the signals.

"Dismounted action"

11. Tell the squad that the position of the carriers represents the section RV, where the section will be met by the section commander's driver who will order "**Dismounted action**" and direct the Nos. 1 up to the section commander, represented by the instructor.

12. Detail two gun teams and drivers and a section commander's driver order "**Fall in**" and "**Mount**". The section commander's driver will fall in in front of the instructor, who should stand midway between the gun positions.

13. Explain that on the order "**Dismounted action**," the gun teams will act as in Lesson 50.

14. Tell the section commander's driver to order "**Dismounted action**". As the Nos. 1 arrive on the position, the section commander should indicate the gun positions and the direction in which the guns are to point.

15. When the guns are in action with two liners each as in Lesson 50 explain that the drivers of the gun carriers will remove all necessary stores and ammunition from the carrier and double forward with them to a convenient position for the Nos. 3. Six liners per gun will always be removed from the carriers unless otherwise ordered. When the drivers have brought up the remainder of the ammunition, the Nos. 3 will take forward two more liners to the gun position. In addition the No. 3 of the odd sub-sections (No. 1, No. 3 or No. 5 gun) will carry forward the spare parts box to his position. The Nos. 3 will then take up positions in the rear and to the outer flanks of the positions, keeping two liners with them, the Nos. 3 of the odd sub-sections also having the aiming post.

16. Order the drivers and Nos. 3 to carry on.

17. State that the section commander's driver should now lead the vehicles back to the vehicle position, where they will camouflage them and then take up a position to watch for signals from the section area.

This will not be necessary in section drill.

"Cease firing"

18. Tell the squad that when the section commander receives the order to cease firing, he will signal for the carriers to come forward and then order "**Cease firing**".

19. Explain that all numbers will act as in Lesson 50. In addition the respective Nos. 3 will replace the spare parts box and assist the drivers in reloading any unused ammunition.

The drivers will bring forward their vehicles, double to the gun position and bring back any ammunition left by the Nos. 3.

20. Order "**Cease firing**".

Practice

21. Practise the squad in "**Dismounted action**" and "**Cease firing**". If there are any surplus members of the squad, they should be detailed to watch and be prepared to criticize each gun team.

Discuss with the squad after each practice.

Conclusion

22. Questions to and from the squad.

23. Further practice if required.

24. Sum up main points.

LESSON 69—CARRIER ACTION

A INSTRUCTOR'S NOTES

Aim

1. To practise the section in coming into a hull-down position.

Class and instructors

2. Squads under squad instructors, assembled in single rank on the flank between the two carriers and the section position.

Carrier drivers are required for this lesson.

Periods

3. One 45-minute period.

Stores

4. Two carriers complete with section drill stores.

Preparation

5. The instructor must select:—

(a) A target.

(b) The two carrier positions.

(c) The position of the enemy.

(d) The section RV.

6. Gun flags should be placed out to indicate the approximate gun position.

B CONDUCT OF LESSON

Approach

7. Give the aim of the lesson (*see* para 1 above). State that no new teachings or drill are taught in this lesson. The lesson is intended to follow from Lesson 65 by practising with two carriers forming a section.

Revision

8. Revise, by question and answer, the drill for occupying a hull-down position (*see* Lesson 65).

Carrier action

9. Paint a simple tactical picture.
Detail two gun teams and a section commander's driver.

10. Order "Fall in" and "Mount" Send the section back to the section RV, ordering them to prepare for carrier action.

11. Despatch the section commander's driver back to the section RV to send the Nos. 1 up on foot.

12. The section should now occupy the position.

13. Fall out the gun teams and discuss the occupation.

Conclusion

14. Questions from the squad.

15. Further practice if time allows.

16. Sum up main points.

LESSON 70—FIRE DISCIPLINE

A INSTRUCTOR'S NOTES

Aim

1. To practise the section in coming into action and engaging targets.

Class and instructors

2. Squads under squad instructors, assembled in single rank on the flank between the two carriers and the section position.

Periods

3. One 45-minute period.

Stores

4. Two carriers complete with section drill stores. If no natural landscape available, landscape targets can be used, preferably one for each gun.

Preparation

5. The two carriers will be drawn up side by side and about 15 yards apart. The spare parts box will be laid out in between the two carriers, representing its position on the section commander's carrier. Gun stores should be loaded on the carriers, and the gun flags planted about 15 yards apart, and 15 yards in front of the carriers. If landscape targets are being used they should be placed just in front of the gun flags.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above). Explain that this lesson consists of practice in the whole operation of coming into action and engaging a target. It is, in fact, a combination of Lessons 70 and 55.

Fire discipline

8. Detail two gun teams and drivers and a section commander's driver; order "Fall in" and "Mount"

9. Exercise the section in "Dismounted action."

10. Leave the Nos. 1 and 2 at the guns and order the remainder to join the spectators.

11. Organize the arc of fire. The instructor should take post as the section commander on the left of the guns.

12. Split the spectators into two groups, one behind each gun. Order the spectators to watch, and be prepared to criticize the actions of the Nos. 1 and 2 and to check aims.

13. Engage one or two targets. Discuss the actions of Nos. 1 and 2.

14. Exercise the section in "Cease firing."

15. Practise the squad in coming into action and engaging all types of target, including allowances for side winds.

16. When a satisfactory standard has been reached, exercise the section with the section commander on the right of the guns. Signals should then be passed on by a No. 3 acting as a connecting link.

Conclusion

17. Questions from the squad.

18. Sum up main points.

LESSON 71—REPLACEMENT OF BREAKAGES

A INSTRUCTOR'S NOTES

Aim

1. To teach the gun teams the drill for replacing parts that are broken.

Class and instructors

2. Squads under squad instructors, assembled in single rank on the flank between the two carriers and the section position.

Periods

3. One 45-minute period.

Stores

4. Two carriers complete with section drill stores.
If no natural landscape is available, landscape targets can be used, preferably one for each gun.

Preparation

5. The two carriers will be drawn up side by side and about 15 yards apart. The spare parts box will be laid out in between the two carriers, representing its position on the section commander's carrier. Gun stores should be loaded on the carriers and the gun flags planted about 15 yards apart 15 yards in front of the carriers. If landscape targets are being used they should be placed just in front of the gun flags.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (see para 1 above).
8. Detail two gun teams and a section commander's driver, order "Fall in," "Mount," "Dismounted action"
9. Engage a target, order "Rest" and move the squad to one gun.

Replacement of breakages

10. Explain the system of replacing breakages:—

(a) *Where the spare part required is carried in the spare parts case.*
The No. 2 replaces the broken part from the spare parts case. If the lock is broken, he calls up the No. 3 and hands it together with the wallet to him. The No. 3 carries out the necessary repair and returns the lock and wallet to the No. 2.

(b) *Where the spare part required is not in the spare parts case.*
The No. 2 calls for the spare part from the spare parts box. The No. 3 takes the spare part from the box and gives it to the No. 2.

11. State that:—

- (a) All broken parts must be retained in the spare parts box for examination.
- (b) The No. 1 is responsible for seeing that the correct supply of spare parts is maintained.
- (c) As spare parts are used up from the spare parts case, they must be replaced from the spare parts box.

12. Practise the squad in replacing breakages. The instructor can do this by engaging a target and exercising the Nos. 1 in stoppages caused by breakages.

*Example:—*4th position, 2nd phase, caused by a broken firing pin.
Special stoppage caused by a broken feedblock.

Conclusion

13. Questions to and from the squad.
14. Sum up main points.

LESSON 72—OBSCURATION OF THE TARGET

A INSTRUCTOR'S NOTES

Aim

1. To teach the section the arrangements necessary to enable it to continue engaging a target which is likely to become obscured.

Class and instructors

2. Squads under squad instructors, assembled in single rank on the flank between the two carriers and the section position.

Periods

3. One 45-minute period.

Stores

4. Section drill stores, *ie*, two carriers complete with guns, tripods, condenser cans and tubes, dial sights, spare parts cases, six liners per gun, spare parts box, aiming post, belts with drill cartridges, two gun flags. If no natural landscape available, landscape targets can be used, preferably one for each gun.

Preparation

5. The two carriers will be drawn up side by side and about 15 yards apart. The spare parts box will be laid out in between the two carriers, representing its position on the section commander's carrier. Gun stores should be loaded on the carriers, and the gun flags planted about 15 yards apart, 15 yards in front of the carriers. If wet groundsheets should be placed out on the gun positions. If landscape targets are used they should be placed just in front of the gun flags.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

7. Detail two gun teams and drivers, and a section commander's driver. Order "Fall in," "Mount" and "Dismounted action" Engage a target. Order "Rest" and order the drivers to join the spectators.

Revision

8. Revise Lesson 42 by question and answer.

Approach

9. Give the aim of the lesson (*see* para 1 above). Tell the squad that there are two drills required, one when the obscuration is likely to be of short duration (*eg*, temporary smoke screen), and one when the obscuration is likely to last some time (*eg*, fog rising or prolonged artillery concentration on the target).

Temporary obscuration

10. State that, when the target is likely to be obscured for a short time, the section commander will order "Stop" and "Pick up aiming mark"

11. Explain that on that order the No. 1 will:—

- (a) Re-lay on the target.
- (b) Lower the tangent sight.
- (c) Record the QE.
- (d) Pick up an aiming mark with the lensatic sight. Any clearly defined object at a short range from the gun will do.

12. Order "Position" "Fire" and practise the Nos. 1.

13. Explain that the No. 2 will:—

- (a) Set the tripod dial at zero.
- (b) Note the aiming mark.
- (c) Note the reading on the angle of sight drum.

14. Practise the Nos. 2.

15. Explain that when the target can again be seen, the section commander will order "Stop" "Remove dial sights" The Nos. 1 will do as ordered, and the section commander will then give the necessary orders to continue firing by direct means.

16. Practise the squad in temporary obscuration.

Prolonged obscuration

17. State that when the target is likely to be obscured for a long time, and provided sufficient warning is obtained, the section commander will order:—

"Stop," "Unload," "Clear gun," "Out aiming post"

18. Explain that on the order "Out aiming post":—

- (a) The No. 1 will close the rear cover, place on the dial sight record the QE and align the lensatic sight on the aiming post.
- (b) The No. 2 will set the tripod dial at zero and note the angle of sight.
- (c) The No. 3 of the odd sub-section will put out the aiming post centrally about 15 yards in front of the guns.

19. Order "Go-on" and then "Stop," "Unload," "Clear guns," "Out aiming post" When the Nos. 1 have aligned their lensatic sights order "Load" and "Go-on"

20. Explain that when the target can again be seen, the Nos. 1 will act on the section commander's orders as in para 15. When the aiming post is in use it will be left out in front of the guns until "Cease firing" is ordered, when "Clear gun" will be ordered before "Cease firing"

21. Order "Stop"—"Remove dial sights"

Conclusion

22. Practise the squad in prolonged obscuration.

23. Questions to and from the squad.

24. Sum up main points.

LESSON 73—CHANGING FROM DIRECT FIRE TO NIGHT FIRING AND VICE VERSA

A INSTRUCTOR'S NOTES

Aim

1. To teach the section the preparations required to enable the guns to continue engaging a target by night.

2. To teach the section how to change back to direct fire at daylight.

Class and instructors

3. Squads under squad instructors, assembled on one flank of the gun position.

Periods

4. One 45-minute period.

Stores

5. Two carriers complete with section drill stores, aiming lamp and three hand lamps.

Preparation

6. Stores and carriers laid out for section drill. Aiming lamp and hand lamps with the stores representing the section commander's carrier.

B CONDUCT OF LESSON

Preliminaries

7. Safety precautions.

Approach

8. Give the aim of the lesson (*see* para 1 above).

9. Detail a section and get it into action. State that it will soon be getting dark and that the section is required to engage a target during the night.

Changing to night firing

10. State that the section commander will lay the guns on the target and send back No. 3 of the odd sub-section to bring up the night firing stores. Send the No. 3 to fetch the aiming lamp and three hand lamps.

11. Tell the squad that the section commander will then order "Prepare for night firing"

Explain that on that order, the No. 1 will lower the tangent sight and record the QE. The No. 2 will zero the tripod dial. The No. 3 of the odd sub-section will hand one lamp to the section commander and one to the other No. 3. Both Nos. 3 will then take post on the left of their guns ready to assist their Nos. 1.

12. Order "Prepare for night firing"

13. Order "Unload," "Clear gun"

14. Explain that the section commander will order "Out aiming lamp" and on that order:—

- (a) Nos. 1 will close the rear cover.
- (b) No. 3 of the odd sub-section will put out the aiming post, place on the lamp, secure the box, attach the line to the switch and bring the reel back to the section commander.
- (c) Nos. 1 will then align their lensatic sights on the aiming lamp.

15. Order "Out aiming lamp"

16. Tell the squad that the guns are now laid to engage the target by night and that, at the appropriate time, the section commander will order "Load" and "Fire"

Return to direct fire

17. Explain that when day breaks, the section commander will order:—"Prepare for direct fire," "Unload," "Clear guns," "Remove dial sights," "In aiming lamp"

The Nos. 1 will unload, clear guns and zero and remove dial sights. The No. 3 of the odd sub-section will bring in the aiming lamp and box, re-wind the line and replace it in the box, and collect the hand lamps. When an opportunity arises, he will return the night firing stores to the carrier.

18. Practise the squad in changing over to night firing and back to direct fire.

Conclusion

19. Questions to and from the squad.
20. Sum up main points.

LESSON 74—RELIEF OF GUNS BY NIGHT

A INSTRUCTOR'S NOTES

Aim

1. To teach the method of relieving a section in action by night.

Class and instructors

2. Squads under squad instructors.

Periods

3. One 45-minute period. This Lesson is best taught initially in daylight. Later, practice should be given in darkness.

Stores

4. Two guns, tripods, dial sights, condenser cans and tubes, aiming post and aiming lamp. Two hand lamps, eight liners and one set of night line pegs.

Preparation

5. One gun will be in position, dial attached and laid on its fixed line, lensatic sight adjusted on the aiming lamp, by means of the deflection drums. The other set of gun stores should be laid out a few yards in rear.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above). Tell the squad that on occasion a section which is in action may be relieved by another section. Such relief will normally take place at night, when guns are laid on fixed lines. The relief of each gun is carried out separately to ensure that one gun is always in action. The section commander will indicate which gun is to be relieved first, but the actual relief of the gun is the responsibility of the Nos. 1 as the section commanders will be occupied in handing and taking over stores, information and orders.

8. State that, in this lesson, the relief of one gun only will be considered. The relief of the other gun would take exactly the same form.

Relief of guns

9. Detail a No. 1, 2 and 3 for each gun. Explain, using the members of the squad.

10. The No. 1 of the outgoing gun will check to make sure he is on his fixed line. The angle on the deflection drums and the QE will be noted by the No. 1 of the incoming gun, who will set his dial sight accordingly.

11. The No. 3 of the outgoing gun will remove the ammunition and condenser can to a flank.

12. The No. 1 of the outgoing gun will take off his dial sight and, with the aid of the No. 2, remove the gun and crosshead from the tripod, taking care not to disturb the tripod.

The No. 1 then places a gun peg and collar under the tripod so that the cross on the collar coincides with the cross-wires at the bottom of the tripod. The No. 3 will assist by shining a shaded lamp on the collar. If the tripod has no cross-wires, the ribs inside the socket must be used as a guide.

The No. 1 of the outgoing gun will then remove his tripod without disturbing the gun peg and collar.

13. The No. 1 of the incoming gun will remove the cross-head and mount the tripod accurately over the collar. He will then stamp in the legs and ensure that the crosswires coincide with the cross on the collar. He will replace the cross-head and tighten the traversing clamp. The Nos. 2 and 3 will mount the gun and bring up the gun stores.

14. The No. 1 of the incoming gun will put on his dial sight, checking that it registers the correct readings, and tap the gun until the lensatic sight is aligned on the aiming lamp. The gun is now laid for direction. When the bubble is levelled it will be laid for elevation. He will then half load and press the thumbpiece.

15. When both guns of the section are laid for elevation and direction, the aiming lamp will be removed. The relieving section will then put out its own aiming lamp. The Nos. 1 will then align their lensatic sights on the aiming lamp using the deflection drums and taking care not to disturb the guns. The angle of switch and the QE will be noted on a piece of paper to be kept in the dial sight boxes.

16. Practise the squad in reliefs by night, one gun relieving the other. The instructor can test the accuracy of the relief by checking the laying of the gun with the tangent sight.

Conclusion

17. Questions to and from the squad.

18. Sum up main points.

CHAPTER 14

INDIRECT FIRE DRILL

INTRODUCTORY NOTES

Organization

1. In indirect fire, the fire of four guns is required in order to engage targets effectively. Two of the machine gun sections of the machine gun platoon therefore work together as the machine gun group under an officer

or NCO of the machine gun platoon who is referred to as the group commander.

Class and instructors

2. In all indirect fire lessons, three instructors are required to teach and supervise the actions of the gun numbers. One will act as instructor and group commander. The other two will act as senior and junior section commanders and will also assist in supervising the work of the gun numbers.

3. The instructor should normally stand at least 30 yards in front of the guns. Both he and the senior section commander should use megaphones.

Senior and junior section commanders

4. Throughout this chapter, duties are allotted specifically to the senior and junior section commanders. The senior section commander will be in charge of the gun line and is responsible for transmitting the orders of the group commander to the guns. The junior section commander will generally assist in supervising the gun line and transmit the signals of the senior section commander to the guns.

5. At the beginning of each drill, the section commanders will fall in in front of the centre of the gun line facing the instructor. The instructor will then give the following information to them:—

(a) The direction in which the guns are to be mounted.

(b) The number of liners to be off-loaded.

(c) The vehicle position.

The senior section commander will then double to a position in the centre of the gun line and extend his right arm in the direction in which the guns are to point. The junior section commander will signal up the carriers. As they arrive, he will direct them to their respective gun flags and pass on the information in (b) and (c) above. He should not allow the carriers to halt while passing on this information.

6. When the guns are in action the section commanders will take post on the flanks of the gun line and kneel on one knee—senior section commander on the flank of No. 1 gun, junior section commander on the flank of No. 4 gun.

7. Section commanders will acknowledge all orders by raising their hands. If a repetition is required they will keep their hands raised. The senior section commander will repeat back all orders to the group commander.

8. Before each drill, the gun line will be prepared as follows:—

(a) Gun positions marked:—

No. 1 gun	...	...	...	...	Red flag
No. 2 gun	...	...	...	...	White flag
No. 3 gun	...	...	...	...	Blue flag
No. 4 gun	...	...	...	...	Yellow flag

These flags will be 15 yards apart laterally and will be staggered. No. 1 gun will always be on the right.

(b) The four gun carriers to be used will be formed up about 100 yards to the flank and rear of the position.

(c) A vehicle position will be selected in rear of the position.

Practice

9. As proficiency is obtained, the drills should be practised making use of cover. Particular attention should be paid to avoid the exposure of personnel and vehicles on the crest line.

LESSON 75—"MOUNT GUN" AND "CEASE FIRING"

A INSTRUCTOR'S NOTES

Aim

1. To teach the drill for coming into action in indirect fire and cease firing.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

3. One 45-minute period.

Stores

4. Four carriers complete with drill stores, four gun flags and two megaphones.

Preparation

5. See Introductory Notes.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (see para 1 above). Explain paras 1, 2, 4, and 8 of the Introductory Notes.
"Mount gun"

8. Detail four gun teams and order "Fall-in" and "Mount". Send the spectators to one flank of the gun line.

9. Issue orders to section commanders. When the carriers arrive behind their gun flags, order the gun teams to remain still.

10. State that when the carriers arrive at the gun flags, the Nos. 1 will order "For indirect fire—Mount gun". The Nos. 1 will dismount, sling the dial sight box over their right shoulders and double forward to their gun flags with the tripods. They will mount the tripods over the gun flags and with the exception of No. 1 of No. 1 gun, stamp the legs in. When the guns are mounted, they will place on their dial sights.

11. Order the Nos. 1 to carry on.

12. State that the Nos. 2 and 3 will act as in section drill. The Nos. 3 of Nos. 1 and 3 guns have the additional duty of planting the aiming posts centrally between 1 and 2 guns and 3 and 4 guns.

13. Order the Nos. 2 and 3 to carry on.

14. Tell the squad that the drivers assist in off-loading the ammunition as in section drill. When their carriers are unloaded they drive off to the vehicle position ordered.

15. Order the drivers to carry on.

16. Order "Stand clear" and fall in the squad in the centre of the gun line.

"Cease firing"

17. Explain that when the senior section commander receives "Cease firing" from the group commander, he will acknowledge it. He will then signal the carriers forward. The drivers will bring their carriers to a position in rear of their respective guns.

18. Detail fresh gun teams and order "Fall-in," "Take post" and "Load"

19. Signal "Cease firing"

20. State that as the carriers are on the way up, the senior section commander will order:—"Unload," "Clear guns," "Remove dial sights"

The Nos. 1 will act as in gun drill, reporting their guns clear in order. Tell the senior section commander to carry on.

21. Explain that as soon as the senior section commander sees that all dial-sights are in their boxes, he will order "Cease firing". All gun numbers will then act as in section drill. The Nos. 3 will collect their aiming posts and the section commanders will collect the gun flags and zero posts.

22. Tell the senior section commander to order "Cease firing"

23. Practise the squad in "Mount gun" and "Cease firing."

Conclusion

24. Questions from the squad.

25. Further practice to increase speed.

26. Sum up main points.

LESSON 76—PARALLELING

A INSTRUCTOR'S NOTES

Aim

1. To teach the drill of putting the guns on parallel lines for indirect fire.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

3. One 45-minute period.

Stores

4. Four carriers complete with drill stores, four gun flags, two megaphones, and two zero posts.

Preparation

5. See Introductory Notes. The two zero posts will be planted in line with No. 1 gun flag.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Revision

7. Revise by question and answer Lesson 40.

Approach

8. Give the aim of the lesson (see para 1 above). State that in indirect fire the lines of fire of the four guns are made and kept parallel. The group commander can thus give one switch for the four guns instead of separate switches for each gun.

9. Detail four gun teams, order "Fall-in" and "Mount". Bring the guns into action and then fall out all except Nos. 1 and 2 of No. 1 gun. Assemble the squad in the rear of No. 1 gun.

Placing No. 1 gun on its zero line

10. State that when the guns are mounted, Nos. 1 will ensure that the dial and deflection drums of the dial sight are at zero and the lensatic sight locked.

11. Explain that directly No. 1 gun is mounted, the No. 1 and 2 will align the gun on the zero posts as in Lesson 38. They will then stamp in the tripod and recheck the line of sight. No. 1 gun is now said to be on its zero line.

12. Practise the No. 1 and 2 in aligning the lensatic sight on the zero posts.

Paralleling

13. Explain that the senior section commander will check that No. 1 gun is correctly aligned and then lay the lensatic sight, by means of the deflection drums, on the lensatic sight of each gun in turn, starting with No. 4 gun. The angles to each gun will be read from the front pointer of the dial sight and will be ordered to each gun in turn in the following manner. The senior section commander will order "Zero lines":—

"No. 4 left	— degrees	— minutes
"No. 3 left	— degrees	— minutes."
"No. 2 left	— degrees	— minutes."

14. Order the gun teams to "Fall in" and "Take post". The senior section commander will then measure and call out the angles. Tell the squad that when the angle for their gun is called out, the Nos. 1 and 2 will act as in Lesson 40.

The junior section commander will acknowledge each angle in turn and move to each gun, checking and supervising the placing on of the switches.

Checking for parallelism

15. Explain:—

When all the guns are laid, the junior section commander will check for parallelism. Beginning with No. 1 gun, he will double down the gun line, kneeling behind each gun about 15 yards in rear and glancing along the barrel casing. He should then notice if any gun is not on parallel lines. Should any gun appear not to be parallel, he will report "No — gun not on parallel lines." If all guns are parallel he will take post on the flank of No. 4 gun.

16. Tell the junior section commander to check for parallelism.

17. When the senior section commander has given out the angle for No. 2 gun, he will return all drums and dials to zero and check that the line of sight of No. 1 gun is still on the zero posts.

18. The No. 1 of No. 1 gun will unlock and adjust his lensatic sight onto the aiming post. No. 2 will zero the tripod dial.

Reporting on zero lines

19. State that the senior section commander will now report "Guns on zero lines" to the group commander. On this order, No. 3 of No. 1 gun will double out and bring in the zero posts, placing them near No. 1 gun.

20. Tell the senior section commander to report on zero lines.

21. Questions from the squad.

22. Order "Load," followed by "Cease firing"

23. Prepare the gun position again and practise coming into action and paralleling.

Conclusion

24. Questions from the squad.
25. Sum up main points and progress made.

LESSON 77—OBTAINING DIRECTION AND ELEVATION

A INSTRUCTOR'S NOTES

Aim

1. To teach the drill of placing direction and elevation on the guns in indirect fire.
2. To teach the drill for ensuring that guns will clear the crest.

Class and instructors

3. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

4. One 45-minute period.

Stores

5. Four carriers complete with drill stores, two zero posts, four gun flags and two megaphones.

Preparation

6. See Introductory Notes. The two zero posts will be planted in line with No. 1 gun flag.

B. CONDUCT OF LESSON

Preliminaries

7. Safety precautions.

Revision

8. Revise by question and answer Lessons 41 and 57.

Approach

9. Give the aim of the lesson (*see* paras 1 and 2 above).
10. Detail four gun teams, order "Fall in" and "Mount" Bring the group into action and parallel the guns.
11. Order Nos. 3 and drivers to join the spectators and split up the spectators behind each gun.

Obtaining direction

12. State that direction will be ordered in the following manner:—"All.....degrees.....minutes right (or left) of zero" The Nos. 1 will act as in Lesson 57.

13. Order a switch right or left of zero.

Obtaining elevation

14. Tell the squad that elevation will be given out in the following manner:—"All.....hundred (or fifty) plus (or minus).....degrees.....minutes" Or more rarely: "Nos. 1 and 2 guns—hundred (or fifty) plus (or minus).....degrees.....minutes" "Nos. 3 and 4 guns—hundred (or fifty) plus (or minus).....degrees.....minutes" Nos. 1 will act as in Lesson 41.

15. Order a suitable elevation.

Checking crest clearance

16. State that it is the duty of the senior section commander to ensure that Nos. 1 check for crest clearance.

The senior commander estimates the range to the crest and adds 200 yards. Using this range, when the guns have been laid for elevation the senior section commander will order:—

"Check for crest clearance with sights at....."

The Nos. 1 will then set their tangent sights at the range ordered and see if the line of sight through the backsight and foresight clears the crest. If it does not, they will report to the senior section commander:—

"No.....gun does not clear crest"

The senior section commander will then report to the group commander:—

"Guns ready to load"

He will also report if any gun will not clear the crest.

17. Senior section commander should now order the checking of crest clearance.

18. Order "Load"

19. Order "Cease firing" and then practise the squad in coming into action, paralleling, obtaining direction and elevation, and checking crest clearance.

Conclusion

20. Questions from the squad.
21. Sum up main points and discuss progress made.

LESSON 78—APPLICATION OF INDIRECT FIRE ORDERS

A INSTRUCTOR'S NOTES

Aim

1. To teach the squad how to apply the method of fire and to teach the method of reporting "On"
2. To practise the squad in controlled corrections (indirect),

Class and instructors

3. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

4. One 45-minute period.

Stores

5. Four carriers complete with drill stores, two zero posts, four gun flags and two megaphones.

Preparation

6. See Introductory Notes. The two zero posts will be planted in line with No. 1 gun flag.

B CONDUCT OF LESSON

Preliminaries

7. Safety precautions.

Approach

8. Give the aim of the lesson (*see* paras 1 and 2 above).
9. Detail four gun teams, order "Fall in" and "Mount"
10. Bring the guns into action. When the guns have been paralleled, order the Nos. 3 and drivers to join the spectators and split up the spectators behind the four guns.
11. Give a switch and elevation and order "Load"

Taps

12. State that in indirect fire, the number of taps to be employed will be ordered by the group commander. It will never be more than four or less than one. The guns will tap as they do by sections, *ie*, No. 1 and 3 guns tap first to the right, No. 2 and No. 4 guns tap first to the left.

13. Tell the squad that on the command "Right and left—taps," Nos. 1 will report "On" Nos. 2 and the junior section commander will indicate that the guns are ready to fire by raising their hands. Similarly, when the guns have reported "On," the senior section commander will indicate the fact to the group commander by raising his hand.

14. State that on the order or signal "Fire" the section commanders will lower their hands. Taking their time from the junior section commander, the Nos. 2 will shout "Fire" and lower their hands. On the order or signal "Stop" this will be repeated by section commanders and Nos. 2.

15. Exercise the squad in reporting "On," "Fire" and "Stop"

Indirect fire control signals

16. Fall the squad in in the centre of the gun line and demonstrate the following signals:—

(a) Up 50 yards.

Both arms raised at angle of 45 degrees from the head.



(b) Down 50 yards.

Both arms raised at angle of 45 degrees from the side.



(c) Right 30 minutes.

Right arms horizontal and left arm at 45 degrees above it to the right.



(d) Left 30 minutes.

Right arm raised at angle of 45 degrees from the head and left arm at 45 degrees from the side.



Repeating the above signals implies a corresponding increase in the correction, *eg*, (a) repeated three times means "Up 150 yards."

17. Practise the squad in recognizing these signals.

18. Order "Fall in" and "Take post"

Controlled corrections

19. State that corrections for elevation will be ordered or signalled as follows:—"Stop," "All, up (or down)—hundred (or fifty)," "Go on"

The senior section commander will acknowledge and repeat back the orders or signals and will then pass on the corrections verbally to the Nos. 1. He will not order "Go on," but will order "Fire" when all guns have reported "On" Nos. 1 will act as in Lesson 56.

20. Stress that whenever a downward correction is ordered, Nos. 1 will automatically recheck for crest clearance before reporting "On"

21. Explain that corrections for direction are given in a similar manner. Nos. 1 will act as in Lesson 57.

22. Practise the squad in applying controlled corrections.

Checking direction and elevation

23. Tell the squad that, during firing, the senior section commander will periodically check the direction and elevation on the guns by calling

"Check direction and elevation; you should now read.....degrees..... minutes right (or left) of zero and.....hundred (or fifty) plus (or minus)degrees.....minutes." Nos. 1 will then check that they have the readings on their dial sights.

Conclusion

24. Questions from the squad.
25. Further practice in the whole process of coming into action and engaging a target.
26. Sum up main points and discuss progress made.

LESSON 79—FIRE CONTROL CHARTS

A INSTRUCTOR'S NOTES

Aim

1. To accustom the soldier to the means of controlling a programme shoot by means of a fire control chart.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

3. One 45-minute period.

Stores

4. Four carriers complete with drill stores, two zero posts, four gun flags and two megaphones. Three prepared fire control charts and three watches.

Preparation

5. See Introductory Notes. The two zero posts will be planted in line with the No. 1 gun flag. The instructor must prepare three fire control charts for use during the lesson.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above). Explain that during long programme shoots, it will often be necessary to use fire control charts. When the guns have been paralleled, the group commander will call for section commanders and issue a fire control chart to each and synchronise watches. These charts contain the necessary data for each section, while that used by the group commander contains the data for all four guns. When using fire control charts, section commanders will supervise the work of their own sections. By night, section commanders will give orders to each gun in turn in order to avoid unnecessary noise.

8. Detail four gun teams, order "Fall in" and "Mount"

9. Bring the guns into action and have them paralleled.

Fire control charts

10. Order "Prepare for Task I"

Section commanders should now order:—

"All.....degrees.....minutes right (or left) of zero"

"All.....hundred (or fifty) plus (or minus).....degrees.....minutes"

The switch and elevation is obtained from the fire control chart. They should then order "Load," "Right and left taps" and "Rest" The section commanders report that their sections are ready to fire.

11. At the time laid down on the chart, the group commander orders "Fire." The rates of fire and lifts shown in the fire control chart are controlled by the section commanders.

Conclusion

12. Questions from the squad.
13. Sum up main points and discuss progress made.

LESSON 80—CHANGING FROM INDIRECT FIRE TO NIGHT FIRING AND VICE VERSA

A INSTRUCTOR'S NOTES

Aim

1. To teach the drill of changing from indirect fire to night firing and for changing back to indirect fire again.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. Carrier drivers will be required. The squad should be assembled in two ranks in front of the gun line.

Periods

3. One 45-minute period.

Stores

4. Four carriers complete with gun stores, four gun flags, two zero posts, two megaphones, two aiming lamps.

Preparation

5. Two zero posts planted in line with No. 1 gun and gun flags in position.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.
7. Give the aim of the lesson.

8. Detail four gun teams, order "Fall in" and "Mount"

9. Order "Stop" Split up the spectators, including Nos. 3 and drivers, behind each gun.

Changing to night firing

10. Explain that the change-over will only entail the following duties:— The Nos. 1 will relay on the aiming post "Unload," "Clear guns" will be ordered and, after the Nos. 3 have attached the aiming lamp, Nos. 1 will align the lensatic sight on to the lamp.

11. Practise changing over to night firing.

Changing back to indirect fire

12. Explain that to change from night firing to indirect fire, the Nos. 1 will check their aims on the aiming lamp, "Unload," "Clear guns," will be ordered the Nos. 3 will remove the lamps from the aiming posts and the Nos. 1 will then re-align their lensatic sights on to the aiming posts.

13. Practice the squad in changing back to indirect fire.

Conclusion

14. Questions to and from the squad.

15. Further practice as necessary.

16. Sum up main points.

LESSON 81—COMING INTO ACTION AND CEASE FIRING BY NIGHT

A INSTRUCTOR'S NOTES

Aim

1. To teach the drill of coming into action by night and of cease firing.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. The squad should be assembled in two ranks in the centre of the gun line.

Periods

3. One 45-minute period by day.

Stores

4. Four carriers complete with gun stores, four gun flags, four zero posts, four direction pegs, seven hand lamps, and two aiming lamps.

Preparation

5. See Introductory Notes. One direction peg and one zero post should be planted in line with each gun flag. Carriers should be drawn up a suitable distance in rear of their respective gun flags.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (*see* para 1 above). Explain that machine gun groups can come into action and engage targets by night if there has been sufficient time in daylight for the group commander to obtain the data required to hit the target and to peg the position.

8. Although this lesson is taught in daylight, noise should be reduced to a minimum and gun numbers should not double.

"Prepare for night firing"

9. State that the loads will be allocated by the section commanders before the group arrives at the point where stores are to be off-loaded.

10. Explain that at the off-loading point, section commanders will order "Prepare for night firing" Gun teams will then unload the stores as already detailed and sections will fall in, in file, in front of the carrier. Each section commander will check to see that all necessary stores have been off-loaded and then lead his section forward to a position in rear of his gun flags. Each section commander will call up his Nos. 1 and show them their gun flag, the direction of the rear leg of the tripod and the direction of the zero post and direction peg.

11. Section commanders should now order "Prepare for night firing" and act as in para 10 above.

Coming into action

12. Explain that Nos. 1 will order quietly "No. ... gun for night firing, mount gun" On that order, Nos. 1 and 2 will mount their gun over the gun flag. The shoes of the tripod will not be stamped in, and the dial sight will be attached to the gun. Nos. 3, when called up by Nos. 1, will bring all the ammunition up to the gun and position themselves on the left of the gun ready to assist the No. 1. In addition, the Nos. 3 of the odd sub-section will bring up the aiming post and lamp. All the Nos. 3 will take over a hand lamp from their Nos. 1.

13. Order the Nos. 1 to get their guns mounted.

14. Order "Stand clear" and fall the squad in in the centre of the gun line.

"Cease firing"

15. State that when the group commander orders "Cease firing," the section commanders will order:—

"Unload," "Clear guns," "Remove dial sights," "In aiming lamps"

All gun numbers will act as in Lesson 75.

16. Order "Fall in," "Take post," and "Load"

17. Order "Cease firing"

18. Tell the squad that the section commanders will now order "Cease firing" The guns will be dismounted and the section commanders will fall in their sections and check stores. The section commander is responsible for the flags, pegs and zero posts. The section will then move back to the carriers, replace stores and mount. Each No. 1 will report to the section commander when his carrier is ready to move off.

19. Tell the section commanders to order "Cease firing"

Conclusion

20. Questions from the squad.

21. Further practise if necessary.

22. Sum up main points.

LESSON 82—OBTAINING DIRECTION AND ELEVATION BY NIGHT

A INSTRUCTOR'S NOTES

Aim

1. To teach the method of placing guns on zero lines and of laying them to hit the target by night.

Class and instructors

2. Three instructors and a squad of at least 12 and preferably not more than 24. The squad should be assembled in two ranks in the centre of the gun line.

Periods

3. One 45-minute period by day. Lesson 81 and 82 should be practised as one operation by night when an adequate standard has been reached by day.

Stores

4. Four carriers complete with gun stores, four gun flags, four zero posts, four direction pegs, seven hand lamps and two aiming lamps, three prepared fire control charts.

Preparation

5. See Introductory Notes. One direction peg and one zero post should be planted in line with each gun flag. Carriers should be drawn up a suitable distance in rear of their respective gun flags.

B CONDUCT OF LESSON

Preliminaries

6. Safety precautions.

Approach

7. Give the aim of the lesson (see para 1 above).

8. Detail four gun teams, order "Fall in," and "Mount" and bring the guns into action for night firing.

9. Fall out all except Nos. 1, 2, and 3 of No. 1 gun and move squad to the rear of the gun.

Placing guns on Zero lines

10. State that the zero line for each gun has been pegged in daylight by the group commander.

11. Demonstrate that the section commander will take the No. 3 of the odd sub-section, complete with aiming lamp and post, to the direction peg. He will tell the No. 3 to place the aiming lamp behind the direction peg and switch it on, so that the peg is outlined against the lamp. He will then go back to the gun and order:—"No 1 gun, zero line"

12. On this order, the No. 1 will ensure that the dial and deflection drums are at zero, and the lensatic sight latched. Assisted by the No. 2, he will move the gun until the line of sight through the lensatic sight is aligned on the zero post and aiming lamp. He will then order the legs to be stamped in, re-check the aim and order the No. 2 to zero the tripod dial.

The No. 3 of the even sub-section will assist the No. 1 by shining a hand lamp on to the front of the lensatic sight.

When the No. 1 is satisfied that he has a correct aim, he will report "No. 1 gun, correct," to the section commander.

13. Tell the squad that the section commander will then repeat the process with his other gun. When both guns are on their zero lines, he will collect the zero posts, and return to his position in between his two guns. The No. 3 of the odd sub-section will plant the aiming post, put on the aiming lamp and unreel the line back to the section commander. When the lamp is switched on, both Nos. 1 will free-wheel their lensatic sights on to it. The Nos. 3 will take up their positions on the left of their guns.

14. Order "Take post" and practice the squad in laying the guns on zero lines.

Direction and elevation

15. State that the direction and elevation are given from fire control charts which are always used at night. Issue the charts and order "Prepare for Task I" The procedure is now as in Lesson 81.

Conclusion

16. Questions from the squad.

17. Further practice if time allows.

18. Sum up main points.

CHAPTER 15

BATTLE PROCEDURE

INTRODUCTORY NOTES

1. Machine gun fire will normally be required as part of a co-ordinated fire plan. The preliminary arrangements to bring sections into action, therefore, will usually be made by the machine gun platoon commander.

In the event of a section being placed under command of a rifle company commander, the section commander will be responsible for the deployment of his section in accordance with the rifle company commander's requirements.

2. The following lessons are designed to teach battle procedure for every role in which machine guns are likely to be employed. Machine guns may either be employed as single sections under command of rifle companies or as two or more sections under command of the machine gun platoon commander or second-in-command.

3. In order to avoid having two procedures for each role, *ie*, one for a single section, and one for two or more sections, these procedures are based on two sections under the command of the platoon commander. It should not be assumed however that this is necessarily the normal method of employment. Machine gun sections will as frequently be employed singly and section commanders must be trained to undertake the additional duties entailed when operating independently.

4. The following procedures give roles for the platoon commander and platoon 2 IC but do not give any special roles to the platoon sergeant. The role of the platoon sergeant will be mainly administrative but he must be trained and able to take over the duties of the platoon 2 IC if necessary.

5. The normal fire unit is the section. Under certain circumstances however (*eg*, defence where fields of fire are restricted to 500-600 yards or less), it may be necessary to sight guns singly. There is no separate battle procedure in this event. Guns should be placed under the direct command of the rifle company or platoon commander in whose area they are sited and owing to the limited fire effect of single guns will be suitable only to assist in the immediate company fire plan.

The section commander, in these circumstances, may assist the rifle company or platoon commander in the siting of the guns, but will not be able to exercise any control over their fire.

LESSON 83—RECONNAISSANCE OF PLATOON AND SECTION AREAS

1. The platoon area will be selected by the platoon commander, who will satisfy himself that the task can be carried out from that area. The detailed reconnaissance will normally be the platoon commander's responsibility. However, the time factor may make it necessary for him to decentralize this responsibility, in some measure, to section commanders.

2. The platoon reconnaissance group.

This will normally consist of:—

- Platoon commander's carrier.
- Platoon commander.
- 2 driver operators.
- Driver mechanic.
- Platoon orderly (motor cycle).

Each section commander's carrier.

- Section commander.
- Rangetaker.
- Section commander's driver mechanic.
- Section commander's driver operator.

This may entail the use of up to four vehicles and a motor cycle, and will necessitate very careful control by the platoon commander. Under certain circumstances a smaller number of vehicles may have to be taken. However, it should be borne in mind that this may seriously impede the mobility of the section commanders, consequently affecting the speed with which the platoon comes into action.

3. The reconnaissance of a platoon area must be carefully planned, and, in this connection, the following points must receive consideration.

- (a) *Time plan.*—The thoroughness with which an area can be reconnoitred will depend to a great extent on the time available. Thus, as shown in the battle procedure duties (Lesson 84), a time plan must be made, which will include a certain time to be allotted to the reconnaissance.
- (b) *Reconnaissance plan.*—Before carrying out a particular reconnaissance, careful consideration must be given to the actual ground as a whole. From this, and with due consideration to the time available, and enemy observation, a plan will be devised for movement during the reconnaissance.
- (c) *Dismounted or carrier action.*—The universal carrier is mobile across country. It affords little protection against any form of armour piercing bullet, and it is vulnerable to plunging fire. It should, therefore, be used primarily as a means of conveying the gun from place to place, and in no circumstances must it be employed as an armoured fighting vehicle.
 - (i) *Dismounted action.*—Guns will normally be fired from positions on the ground, as far greater concealment and protection can be obtained.
 - (ii) *Carrier action.*—When the ground is suitable and speed into and out of action is a primary consideration, it may be desirable to fire the guns from the carriers in "hull down" positions. In this case, the crosshead mounting may be used, or, at short range, the emergency mounting. It should be realized that a carrier cannot cover an arc of fire from a hull-down position.

(d) *Direct fire or indirect fire.*

- (i) *Direct fire.*—This is the normal type of fire employed as it is the more simple, more effective and more flexible means of engaging targets.
- (ii) *Indirect fire.*—Indirect fire positions provide good concealment for the gun line from ground observation but limit flexibility and prevent short range targets from being engaged. This type of fire is particularly suited for harassing tasks by day or night, or when cover and concealment are scarce.

4. Direct fire positions—Dismounted action.

(a) The platoon commander reconnoitres the platoon area and decides on the following:—

- Section areas and section rendezvous.
- Platoon observation post.
- Platoon headquarters.
- Position for vehicles.
- Local protection—Brens, 3.5-inch RL and 2-inch mortar.
- Position from which to give out his orders.

The following are the requirements of:—

- (i) Section areas:—
 - Suitability for the task.
 - Ability to observe the movement of own troops.
 - Covered approaches.
 - Concealment for guns.
 - Safety for own troops.
 - Approximately 100 yards—300 yards apart.

The means of communication at the disposal of the platoon commander for directing the fire of his platoon is the 31 set, telephone (if carried) orderly or signal. This imposes almost no limitations, but, as a guide, it is considered that for control, sections should not be further apart than about 300 yards, and, to minimize the chances of more than one section being neutralized by enemy fire at the same time, not closer together than 100 yards.

(ii) Section RVs:—

- As near the section areas as possible.
- Covered approach for vehicles.
- Easily recognizable points.

(iii) Platoon OP:—

- Good command of the arcs of fire.
- Ability to observe positions, and movement of own troops.
- Cover from fire and enemy observation, both from ground and air.

(iii) Platoon OP:—(Continued)

Covered approach.

Accommodation for the required number of men.

Whenever possible, sited near one section commander's control post. This will enable the platoon commander to give fire direction orders to one section by voice.

(iv) Positions for vehicles:—

Either grouped together in one platoon position or separate as section vehicle positions behind the section areas. The course adopted will naturally be dependent on the situation. Cover from fire and enemy observation, both from ground and air.

(v) Local protection.

The Brens are primarily for the defence of the vehicle positions. The 3.5-inch RLs will be sited where the need for them is greatest.

(vi) Position from which to give out his orders:—

This should, if possible, be in one of the section areas, and at a point from which the whole arc of fire can be seen.

(b) The section commander reconnoitres the section area and decides on the following:—

- Two gun positions.
- Control post.
- Organization of the arcs of fire.

The following are the requirements of:—

(i) Gun positions:—

- Suitability for task.
- Cover from fire and enemy observation, both from ground and air.
- Ability to observe positions, and movement of own troops.
- Covered approach.
- Distance apart approximately 10-20 yards.

(ii) Control post:—

- Good command of the arc of fire.
- Ability to observe positions and movement of own troops.
- Cover from fire and enemy observation, both from ground and air.
- Covered approach.
- Accommodation for the required number of men.
- Sufficient concealment to enable fire control signals to be made.
- Within voice control and preferably to the left of the guns.

(iii) Organization of the arc of fire:—

This will be carried out as shown in Chapter 12, Lesson 66.



1. IF THE PL 2 IC IS NOT AVAILABLE THE COMMAND ON THE VEHICLE POSITION WILL BE UNDERTAKEN BY THE PL 3ST
2. IF THE DISTANCE FROM THE PL OP TO THE VEHICLE POSITION IS NOT VERY GREAT IT MAY BE PREFERABLE TO LEAVE THE REAR LINK 3/1ST IN THE PL COMMS CARRIER AT THE VEHICLE POSITION TO AVOID CONGESTION IN THE OP

PLATE 14—DIAGRAMMATIC LAYOUT OF CARRIER PLATOON (TWO MMG SECS)
DIRECT FIRE—DISMOUNTED ACTION

- (c) *Communications.*—The communications which can be used within the platoon when direct fire, dismounted action is being employed are as follows:—

31 set between platoon OP and each section area.

Telephone as an alternative to the 31 set if line equipment is carried.

31 set to battalion headquarters.

88 set to rifle company. (The 88 sets in the platoon are NOT for internal communication).

5. Direct fire positions.—Carrier action.

- (a) Should the platoon commander decide to use carrier action, he will carry out his reconnaissance in the same manner as shown for dismounted action with the following modifications:—

Section areas:—

To contain suitable "hull-down" positions.

To have cover from observation from any part of the enemy position, not only from the target area.

To have suitable background.

Every effort to be made to avoid clearly defined crests and skylines.

- (b) The section commander will reconnoitre his area as for dismounted action with the following modifications:—

2 approximate carrier positions.
Control post.

The following are the requirements of:—

- (i) Carrier positions:—

Suitable for the task.

Chosen from gun height, when the gun is mounted on the carrier.

Easy "run in."

- (1) Gun flags will be placed in the ground to indicate the approximate carrier positions).

- (ii) Control post:—

This may be on the ground as in dismounted action or on the section commander's carrier.

- (c) *Communications*.—As speed into and out of action is the main consideration when employing direct fire—carrier action, it is not normal to lay any line communications.

6. Indirect fire.—If the platoon commander decides to employ indirect fire he will reconnoitre the platoon area and decide on the following:—

Gun position.

Platoon OP.

Vehicle position.

Position from which to give out orders.

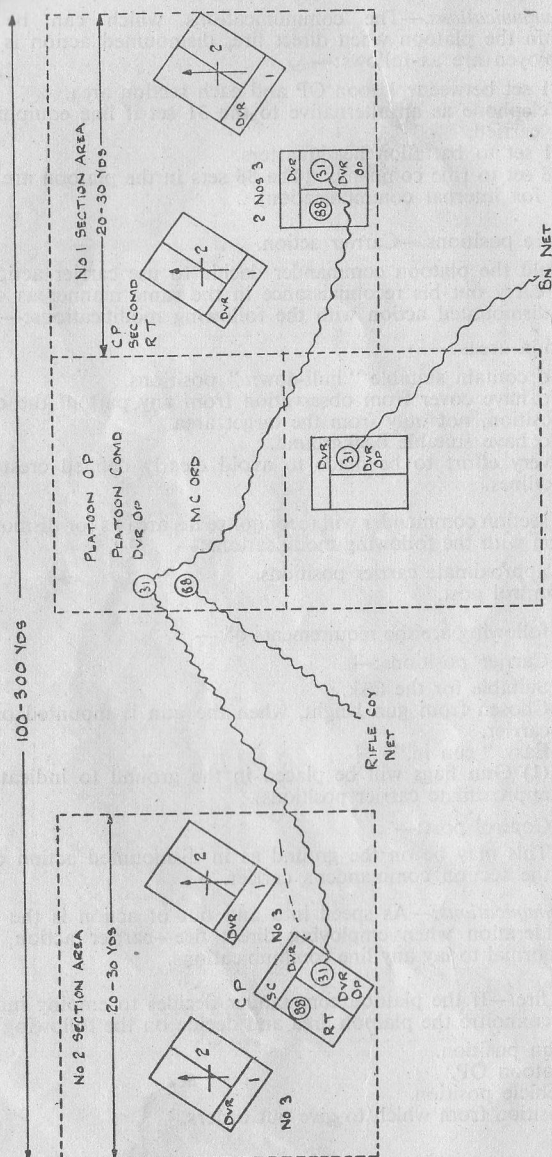


PLATE 15—DIAGRAMMATIC LAYOUT OF CARRIER PLATOON (TWO MMG SECS)
DIRECT FIRE—CARRIER ACTION

The following are the requirements of:—

- (i) *The gun position:*—As near the top of the crest as possible, consistent with concealment and safety. To afford sufficient cover for the carriers to move up to within 10 yards of the gun flags, and for the gun numbers to remain concealed when standing in the carriers.
- (ii) *The platoon OP:*—Good command of any particular target given and the arc of fire. Ability to observe positions, and movement, of own troops. As close to the gun position as possible to ensure accuracy and not more than 200 yards in front of or behind the guns, nor displaced more than 50 yards to a flank.
- (iii) *The vehicle position:*—This will conform to the requirements enumerated in Para 4 sub para (a) (iv).

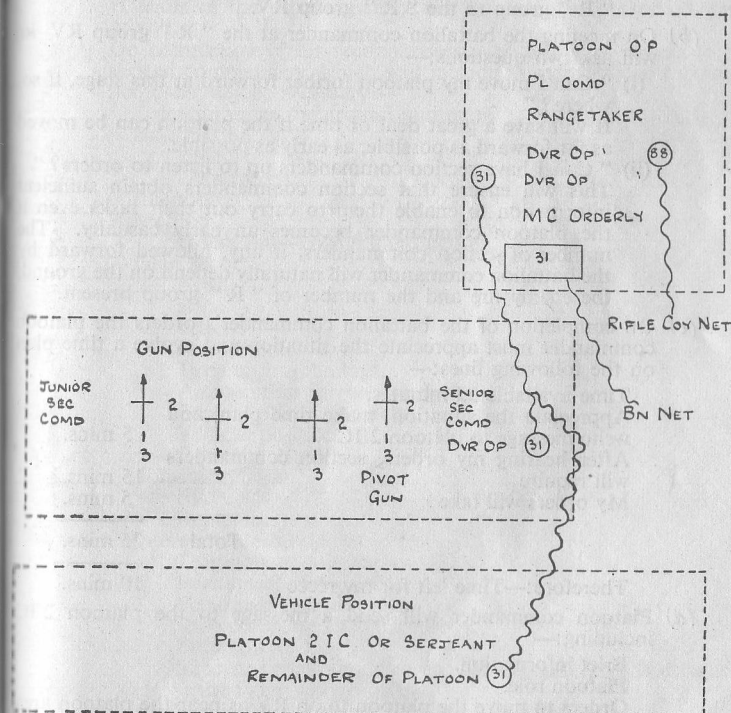


PLATE 16—DIAGRAMMATIC LAYOUT OF MACHINE GUN
PLATOON INDIRECT FIRE

LESSON 84—THE OCCUPATION OF A PLATOON POSITION DIRECT FIRE—DISMOUNTED ACTION—BY DAY

1. The following are the duties of various personnel of the platoon, from the time that the platoon commander receives the warning order from the battalion commander until the platoon is in action.

2. The platoon commander.

(a) On receipt of the warning order, he will:—

- (i) Send the platoon orderly to collect the platoon 2 IC and the "R" group or call them on the platoon 31 set net.
- (ii) Study the message carefully, and consider the planning.
- (iii) Pass on the contents of the warning order to the platoon 2 IC and "R" group ordering the former to lead the platoon to the RV given in the warning order, while he leads the "R" group to the "R" group RV.

(b) On meeting the battalion commander at the "R" group RV he will ask two questions:—

- (i) "Can I move my platoon further forward at this stage, if so, where?"

It will save a great deal of time if the platoon can be moved as far forward as possible, as early as possible.

- (ii) "Can I have section commanders up to listen to orders?"
- This will ensure that section commanders obtain sufficient information to enable them to carry out their tasks even if the platoon commander becomes an early casualty. The number of section commanders, if any, allowed forward by the battalion commander will naturally depend on the ground, the enemy fire and the number of "R" group present.

(c) On completion of the battalion commander's orders the platoon commander must appreciate the situation and evolve a time plan on the following lines:—

Time available 35 minutes.

Appreciate the situation, make time plan, and write message to platoon 2 IC

5 mins.

After hearing my orders, section commanders will require

15 mins.

My orders will take

5 mins.

Total 25 mins.

Therefore:—Time left for my recce

10 mins.

(d) Platoon commander will send a message to the platoon 2 IC including:—

Brief information.

Platoon role.

Orders to move the platoon to an RV as near the platoon area as possible (incl. route if necessary).

Time by which platoon has to be in action.

His own actions and whereabouts.

This message will be sent by means of the platoon orderly, who, after delivering the message will return to the platoon commander, at the same time leading the platoon to its RV, if practicable. The route to be taken by the platoon orderly will be carefully explained to him.

- (e) The platoon commander will now move with his "R" group to his platoon area, where he will put his "R" group under cover, make his reconnaissance plan (Lesson 83 para 3 sub-para (b)) and carry out his reconnaissance.

He will reconnoitre for and decide on:—

Section area and RVs.

Arcs of fire, targets and initial safety problems.

Position for platoon OP.

Position for vehicles.

Siting of the Brens and 3.5-inch RLs.

Position from which to give out orders.

(Details of this reconnaissance are as shown in Lesson 83, para 4(a)(i).)

- (f) On completion of his reconnaissance, he will issue orders to his section commanders, which will include as many of the following points as may be necessary:—

Orientation on the ground and map.

Information.

Enemy.

Own troops.

Intention.

Method.

Direct fire—Dismounted action.

Each section.

Area.

RV.

All sections.

Arcs of fire.

Targets and timings.

Ammunition for various tasks.

Factors affecting safety.

Vehicle position.

Subsequent role.

Administration.

RAP.

Replenishment etc.

Intercommunication.

Telephone requirements.

Position of platoon OP.

Position of platoon HQ.

Rifle company HQ (if nearby).

Battalion HQ.

Success signals (codewords, light-signals, and from where the latter will go up).

Synchronise watches.

H hour.....hrs.

Any questions No. 1 section?

No. 2 section?

- (g) He will move to the platoon RV with his platoon orderly, where the platoon 2 IC and Nos. 1 will be waiting to receive orders. His orders will contain:—

Information.

Enemy

Own troops

} Very briefly.

Intention.

Method.

Direct fire—Dismounted action.

Each section:—

Area.

RV (route if necessary).

Ammunition.

Time by which guns have to be in action.

Any questions?

(Nos. 1 will now move off).

Additional orders for the platoon 2 IC.

Position of platoon HQ.

Position of platoon OP.

Vehicle position.

Local protection (3.5-inch RL and Brens).

Replenishment of ammunition.

Any questions?

- (h) He will now move to the platoon OP, and at the most convenient time during that move, give orders to the driver operators including:—

Position of platoon OP.

Position of platoon HQ.

Position for carrier.

Position for 88 set and 31 set.

Position for rear link 31 set.

Information re—telephone layout.

- (j) On completion of these orders, he will occupy the platoon OP and, when all sections have reported "In Action," will report the platoon "In Action" to battalion HQ, together with the location of platoon OP in code (This will generally be done by wireless).
- (k) As soon as possible, he will pass on full information to the platoon 2 IC at the OP.
- (l) In action, the platoon commander will:—
- Keep in touch with the tactical situation, and carry out reconnaissance when necessary.
 - Issue fire direction orders as required.
 - Keep in touch with battalion HQ and if necessary direct with any rifle company HQ.
 - Pass on all available information to the section commanders and platoon 2 IC.

3. The platoon 2 IC (or platoon sergeant).

- (a) Having received the contents of the battalion commander's warning order, he will:—

(i) Pass on brief information to Nos. 1.

(ii) Lead the platoon to the RV ordered by the platoon commander.

(iii) Supervise the order of march, local protection and the dispersion and camouflage of the carriers both on the move and at the RV.

(iv) Arrange for the Nos. 1 to move to him quickly when signalled.

- (b) On receipt of the written message delivered by the platoon orderly, he will:—

(i) Carry out the same procedure as shown above.

(ii) Arrange for a final check of stores.

- (c) On receipt of verbal orders from the platoon commander, he will:—

(i) Supervise the dispersal and concealment of the carriers.

(ii) Arrange for the siting of the rear link 31 set.

(iii) Arrange for the siting of the 3.5-inch RLs, Brens, 2-inch mortar, and alarm posts for the drivers.

(iv) Arrange for the replenishment of ammunition etc, to the sections.

(v) Report to the platoon commander for full information at the platoon OP.

(vi) Be prepared to take over the command of the platoon in the event of the platoon commander becoming a casualty, or going out on liaison.

(vii) Be prepared, if necessary, to return to platoon HQ which will be near battalion HQ.

4. The section commander.

- (a) He will move forward with the platoon "R" group to the "R" group RV and organize the local protection of the "R" group.

- (b) While the platoon commander is receiving orders, he will arrange for him to be kept under observation.

- (c) On completion of the battalion commander's orders, he will ensure that the platoon commander is kept under observation when doing his reconnaissance, pass on as much information as possible to the remainder of the "R" group and study the map and ground.

- (d) On completion of platoon commander's orders (para 2(f)), the section commander will consider the time available, and move to his area in his carrier with his "R" group.

- (e) On arrival, he will place his carrier under cover, move forward on foot with the rangefinder and driver mechanic, and make his reconnaissance plan.

- (f) He will give orders to his driver mechanic which will include:—
- Area in which he is going to reconnoitre.
 - Position forward of which the carriers must not come.
 - Any necessary orders to be passed on to the Nos. 1 when they arrive.
 - Position for vehicles.
- The driver mechanic will now be sent to the section RV to await the arrival of the Nos. 1.
- (g) He will give orders to his rangetaker including:—
- Arc of fire.
 - Points to which he requires ranges.
 - Time available.
 - Orders to make out a range card if there is sufficient time.
 - Probable position of the section control post.
- (h) He will give orders to his driver operator including:—
- The unloading of the 31 set.
 - The position of the section control post.
 - Netting the 88 set, if necessary, on a rifle company net.
- (j) The section commander will now make his reconnaissance of the section area. He will reconnoitre for and decide on:—
- 2 gun positions.
 - Section control post.
 - Organization of the arc of fire.
- (Details of this reconnaissance are as shown in Lesson 83, para 4(b))
- (k) When the section arrives in the section area, the section commander will get his guns into action as follows:—
- He signals up both Nos. 1 and indicates each gun position and the direction in which the guns are required to point, or, if the guns arrive in the section area at different times, he will signal up each No. 1 in turn. He will then control the higher numbers coming into action.
- (l) As soon as the guns are mounted, and covering their arcs of fire he will send a No. 3 to the platoon OP to report the section "In Action," or he will report over the 31 set.
- (m) He will then organize the arc of fire and as soon as possible will pass on full information to the section and arrange for the local protection of his section area.
- (n) In action, the section commander will:—
- Control the fire of his section.
 - Locate and engage targets within his arc.
 - Solve safety problems as they arise.
 - Make arrangements to continue firing in the event of the target becoming obscured.
 - Keep in contact with the platoon commander.
 - Pass on full information to the section.

5. The section commander's driver mechanic.
- On receipt of his orders from the section commander he will:—
- Move to the section RV to await the arrival of the Nos. 1.
 - Pass on any orders to the Nos. 1.
 - Direct the section up to the section commander.
 - Unload the spare parts box.
 - After all the necessary stores have been removed from the section carriers, he will lead them back to the vehicle position.
6. The Nos. 1.
- On receipt of the platoon commander's orders at the platoon RV, they will:—
 - Move back to their carriers.
 - Senior Nos. 1 lead their sections to their section RVs.
 - On arrival, contact the section commander's driver mechanic and obtain all the available information.
 - Move to the section area and contact the section commander.
 - On receipt of initial orders from the section commanders, they will:—
 - Mount their guns in the required position and direction.
 - Be prepared to receive detailed orders from the section commanders.
7. The No. 3 of the even sub-section.
- Besides the normal duties as laid down in section drill, the additional duties are as follows in the event of line equipment being carried:—
- On receipt of the necessary orders from his section commander, he will:—
 - Move to the platoon OP to report the section in action taking with him the drum of cable and cable-laying apparatus and reconnoitering the best and most covered route for laying the line.
 - Report the section "In Action," secure the end of the wire at the platoon OP, lay line back to his section control post, and connect up the telephone.
 - On "Cease Firing," he will wind in the cable and replace the telephone equipment on the section commander's carrier.
8. The platoon commander's driver operators.
- On receipt of orders from the platoon commander, they will:—
- Unload the 31 and 88 sets in the area of the platoon OP.
 - The carrier will then move to the vehicle position.
9. Throughout the battle procedure the 15-cwt truck is not taken into account. It is intended primarily as an administrative vehicle and as such will more often than not be at the platoon HQ, or battalion "B" echelon.

LESSON 85—MODIFICATIONS FOR DIRECT FIRE CARRIER ACTION

1. The battle procedure duties of the platoon, when carrier action is to be employed, are similar to those enumerated in Lesson 84 with the following modifications:—

2. The platoon commander.

His reconnaissance must be carried out as shown in Lesson 83, para 5(a).

3. The section commander.

(a) His reconnaissance must be carried out in accordance with Lesson 83, para 5(b).

(b) On completion of his reconnaissance, he will give brief orders to the Nos. 1 who will have dismounted and moved forward from their carriers. These orders will contain:—

(i) Target and range if known.

(ii) Approximate carrier position.

(c) He will position his own carrier so that he can control the fire of his section, or, if he decides to control from the ground, he will occupy his control post.

(d) He will give out his fire order, and carry out his normal battle procedure duties, as shown in Lesson 84.

4. The Nos. 1 and the section commander's driver mechanic.

Act as shown in Lesson 69.

LESSON 86—MODIFICATIONS FOR INDIRECT FIRE

1. When it has been decided to occupy an indirect position, there will be certain special modifications to the battle drill duties shown in Lesson 84.

2. The platoon commander.

(a) On arrival in his area, he will:—

(i) Place his "R" group under cover and make his recce plan. (Lesson 83, para 3 (b)).

(ii) Order a driver mechanic to collect the indirect fire equipment (1) director, zero posts, gun flags from the carriers.

(iii) Give orders to one of the rangetakers including:—

Arc of fire.

Points to which he requires ranges.

Time available.

Orders to make out a range card, if there is sufficient time.

Probable position of the OP.

(iv) Carry out his reconnaissance as shown in Lesson 83, para 6.

(b) On completion of his reconnaissance as shown in Lesson para 6.

(i) Give orders to the section commanders, and the platoon 2 IC if he has arrived on the position. These orders will include the same items as for direct fire, with the exception of the method paragraph, which will be as follows:—

Method.

Indirect fire.

Tasks and timings.

No. 1 gun position.

(This should be flagged by the platoon commander on his recce).

Direction of zero line of pivot gun.

Ammunition required.

Vehicle position.

Arrangements for local protection.

(ii) Give the normal orders to the driver operators.

(iii) Move to his OP and obtain the necessary data to engage the targets. This will include:—

Ranges.

Angles of sight.

Angular width of targets.

Safety of own troops.

(iv) Give out his fire order and control the fire of his platoon. This is normally done by 31 set or telephone, although voice control is better if the distance is not too great.

(v) If the platoon 2 IC was not present at the platoon commander's orders, the platoon commander will give him full orders from the OP as early as possible, with particular reference to:—

Vehicle position.

Local protection.

Ammunition supply.

3. The senior section commander.

(a) On completion of orders from the platoon commander, he will:—

(i) Align the posts for the pivot gun.

(ii) Flag the gun positions as ordered by the platoon commander.

(iii) Parallel the guns on their zero lines.

(iv) Calculate the MQA, report it to the platoon commander, ensure the guns clear the crest, and pass on full information to his section.

(v) Take up a position by the pivot gun and relay orders from the platoon commander to the guns.

(b) On "Cease Firing," he will:—

Return his gun flags and zero posts to his carrier.

4. The junior section commander.

(a) On receipt of orders from the platoon commander, he will:—

- (i) Assist the senior section commander in preparing the gun position.
- (ii) Meet the platoon at the RV and direct the gun carriers as near as possible to their gun flags, informing the Nos. 1 that it is indirect fire and number of liners required, and indicate the vehicle position to the drivers.
- (iii) Take up a position on the gun line opposite the senior section commander, repeat and acknowledge all signals and orders, and pass on full information to his section.

(b) On "Cease Firing" he will:—

Return his gun flags and zero posts to his carrier.

5. The platoon 2 IC.

On receipt of orders from the platoon commander, he will carry out his normal duties as in Lesson 84, para 3(c).

LESSON 87—MODIFICATIONS FOR REORGANIZATION

1. **General.** The battle procedure duties in the reorganization will vary according to circumstances which can be summarized as follows:—

(a) The time the pioneer platoon or the REs will take to gap or bridge an obstacle, natural or otherwise, which will prevent vehicles from moving on to the objective.

(The movement of vehicles on to a captured objective is of primary importance and strict control of traffic is necessary, especially when an obstacle has to be negotiated. All transport that is required for reorganization purposes, is, therefore, organized into "F" echelons. For details regarding the movement of "F" echelon transport see Infantry Training Memorandum No. 5 1945—).

(b) The amount of information about the objective that can be obtained from patrols, air photographs, intelligence reports, distant reconnaissance and map appreciation.

(c) Whether the attack is to be by day or night. In this respect, it will usually be found that, if the obstacle is of any size, the attack will have to be carried out by night.

Phase I—The initial preparation

2. The battle procedure duties for the reorganization remain the same as shown in Lesson 84 until the completion of the battalion commander's orders. They are then modified as follows:—

(a) *The platoon commander.*

- (i) On completion of the battalion commander's orders, he will consider the planning and send off, to the platoon 2 IC, a message containing:—

Brief information.

Intention.

Platoon RV and route (if necessary).

All NCOs less one No. 1 per section to come forward to an RV for orders.

Own actions and whereabouts.

This message will be sent off by wireless or by means of the platoon orderly, who will, if practicable, lead the platoon and NCOs to their respective RVs.

- (ii) The battalion commander's orders will have contained the following:—

Information.

Enemy { as much as possible
Own troops { on the ground.

Intention.

Method.

Battalion attack plan.

Battalion reorganization plan.

Administration.

RAP.

Intercommunication.

Position of battalion HQ on the objective.

Success signals.

H hour.....hrs.

- (iii) The reorganization plan will contain the task for the machine gun platoon. The platoon commander will then consider the siting of the section positions on the objective. This can be done either from air photographs, the map, or by distant reconce.

Should it be impossible to site the platoon without close reconnaissance of the ground, the platoon commander will have to contact the battalion commander on the objective, and the decision will have to be made there.

However, if the reorganization is to be carried out in darkness, the section positions must be chosen before the move forward from all the information available, because no satisfactory reconnaissance can normally be carried out until first light the following day, and it is essential for the guns to be in position as soon as possible after the rifle companies have reached their objectives.

- (v) He will also discuss with the battalion commander the move forward of his platoon on to the objective *vide* para 3 below.

- (v) If it has been possible to decide on the rifle company in which the platoon will be sited, he will contact the company commander and discuss with him the following points:—

Company reorganization plan.
Position of company headquarters on the objective.
Machine gun tasks and the positions from which he thinks the sections will be able to carry them out. He will also arrange for his driver operator to net his 88 set on the rifle company net.

- (vi) He will contact the "F" echelon commander, and obtain from him the following information:—

Location of the "F" echelon RV.
Order of march.
Serial numbers.
Time of assembly.
Gap or bridge to be used, or the route.
Battalion dispersal point on the objective.

- (vii) He will rejoin his "O" group and give out his orders, and, assuming that it has been possible to decide on the approximate section areas and that the platoon will move forward on to the objective in the battalion "F" echelon, they will include:—

Information.

Enemy.....
Own troops
The rifle company areas or area in which the sections will operate.
Battalion attack plan.
Battalion reorganization plan.
Any relevant rifle company reorganization plan.

Intention.

Method.
"F" echelon RV and time of assembly.
Order of march (both of "F" echelon and platoon)
Serial numbers.
Route and gap.
Battalion dispersal point.
Platoon RV on the objective (if necessary).
Approximate section areas if known.
Tasks (with compass bearing of centre of arc or fixed lines).
Vehicle position.

Administration.

Battalion RAP.

Intercommunication.

Approximate platoon OP on the objective if known.
Approximate platoon HQ on the objective if known.
Battalion HQ on the objective.
Success signals.
Synchronize watches.
H hour.....hrs.
Any questions?

- (viii) On completion of these orders, he will return to the platoon and pass on the full information. However, if time is short, this duty may have to be delegated to the NCOs.

- (ix) At the appropriate time he will lead the platoon to the "F" echelon RV and form up in accordance with the orders of the "F" echelon commander or, if stores are going to be manhandled on to the objective, then he will lead the platoon to the battalion assembly area.

- (b) The platoon 2 IC.

On receipt of the written message from the platoon commander, he will:—

- (a) Pass on brief information to the Nos. 1.
(b) Order a check of stores and digging tools.
(c) Arrange for sandbags to be filled.
(d) If necessary, lead the platoon to the RV given in the message.
(e) Take forward in his jeep the senior Nos. 1 to the platoon commander's RV for orders.
(f) On completion of platoon commander's orders, return to the platoon and pass on the information if necessary.
(g) Move to the "F" echelon RV or the battalion assembly area at the appropriate time.

Phase II—The move on to the objective

3. This will be governed by the time taken to gap or bridge, for vehicles, any obstacles which may be in existence, and whether the attack will be carried out by day or by night.

- (a) *Plan A.*—By day, when there is either no obstacle or an obstacle which can quickly be gapped or bridged for vehicles:—

The platoon under these circumstances will be under the control of the "F" echelon commander. It will form up and move to a battalion dispersal point on the objective in accordance with his orders. It will be normal for the platoon to travel within the "F" echelon, but, under special circumstances, such as the absence of obstacles, it will be possible for the platoon to move forward outside the "F" echelon following a route laid down by the "F" echelon commander.

It is essential for the platoon "R" group to arrive on the objective as far ahead of the platoon as possible. By doing this the platoon commander will have a small amount of time in which to make any necessary reconnaissance before the platoon arrives. When travelling within the "F" echelon, this is done by having the "R" group and the platoon as two separate serials, the "R" group having the highest priority it is possible to obtain. On arrival on the objective the platoon commander will move straight away with his "R" group to his area, while the platoon under the platoon 2 IC will remain at the battalion dispersal point or, if ordered, will move to a platoon RV.

- (b) *Plan B.*—By day, when there is an obstacle which will not be quickly gapped or bridged for vehicles.

Under this circumstance, it will be necessary for the platoon to move on to the objective on foot, stores being manhandled. The vehicles will remain behind under command of the platoon sergeant and will move forward with the "F" echelon as soon as possible. Again it is essential for the "R" group to arrive on the objective as far ahead of the remainder of the platoon as possible, therefore, it will move on foot near tactical battalion HQ. The platoon will move under command of the platoon 2 IC in rear of the reserve rifle companies and because of this, the "R" group will have to be smaller and might consist of platoon commander, one section commander, one rangetaker and the platoon orderly. (If this plan is adopted, careful preparation must be made beforehand). The platoon should be informed of the long carry as soon as possible, to enable the loads to be prepared. Only the essential stores should be carried, and these should, as far as possible, be carried either in the man's large pack or on the GS man pack carrier. Under certain circumstances the platoon commander may allot higher numbers from other sections to assist with the carrying of stores or assistance may be given from reserve rifle company.

- (c) *Plan C.*—By night, when there may or may not be an obstacle. As previously explained, in this situation the planning will have to be done entirely from air photos, maps and distant reconce, as no satisfactory reconnaissance can normally be carried out until first light on the following day.

The platoon will normally be led forward in one body by the platoon commander, either in the "F" echelon or on foot, depending on whether there is an obstacle or not, and when there is an obstacle, on how long it will take to gap or bridge that obstacle for vehicles. However, if conditions of bright or artificial moonlight exist, a machine gun "R" group may be sent ahead at the discretion of the battalion commander.

(According to which one of the three plans is adopted, so the platoon commander will carry out the particular stage in the battle procedure).

Phase III—The procedure on the objective

4. This will be governed almost entirely by the amount of information available about the objective, and whether the reorganization is to be carried out in daylight or darkness.

- (a) *Procedure A.*—By day, when it has been possible to decide in which company areas the platoon will be sited and the full "R" group is available.

The platoon commander on arrival on the objective, will:—

- (i) Contact battalion HQ by wireless and ascertain whether the rifle companies have reached their objectives; if so, he will move to his area.
- (ii) Make a quick appreciation and reconnaissance.

- (iii) Give the following confirmatory orders to the section commanders:—

Section areas and RVs.
Arcs of fire and temporary fixed lines.
Vehicle positions, if required.
Platoon OP.
Platoon HQ.

- (iv) Move to the platoon RV or the battalion dispersal point and give confirmatory orders to the Nos. 1 and platoon 2 IC as follows:—

Section areas and RVs.
Routes.
Additional orders for the platoon 2 IC.
Platoon OP.
Platoon HQ.
Vehicle position.

- (v) Give the normal orders to the driver operators.
- (vi) Report the platoon in action, together with the location of platoon headquarters in code.
- (vii) Carry out liaison with rifle company or companies in whose areas the platoon is sited. This must be a quick liaison, its object being to warn them of the section areas and arcs of fire.
- (viii) Contact the battalion commander and discuss:—

The latest information.
Any necessity for resiting the sections in different company areas.
The linking up of communications.

- (ix) Carry out a thorough reconnaissance of the company area or areas in which it has been decided to resite the sections, contacting the company commanders concerned, and considering the following:—

Resiting of sections.
Fixed lines.
Mines.
Wiring.
Digging.
Communications.

- (x) Return to the platoon and carry out any necessary resiting. In some cases, if the battalion area is under observation, the movement of the sections cannot be carried out until after dark.
- (xi) Issue orders to the driver operators concerning any additional communications required with the companies.
- (xii) Pass on full information.

The battle procedures for the remainder of the platoon are the same as shown in Lesson 84, but every effort must be made to occupy as quickly as possible, and digging must commence immediately.

- (b) *Procedure B.*—By day, when it has not been possible to decide on the siting of the platoon before the move forward.

The platoon commander, on arrival on the objective will:—

- (i) Contact battalion HQ, ascertain whether the rifle companies have reached their objectives, and obtain the latest information.
 - (ii) Locate his task on the ground, and decide on the most suitable company area or areas from which to carry it out.
 - (iii) Send the platoon orderly to lead up the platoon from the battalion dispersal point.
 - (iv) Move to the rifle company area he has selected and carry out the duties as shown in para 4(a) (iii) to (xii).
- The remainder of the platoon will carry out the normal duties for the occupation of a position by day.

- (c) *Procedure C.*—By night. The platoon commander will:—

- (i) Contact battalion HQ by wireless as soon as he arrives on the objective. He will ascertain whether the rifle companies have reached their objectives and whether the platoon may move forward to its area.
- (ii) Leave the platoon under the command of the platoon 2 IC while he leads the section and platoon OP personnel to their areas. (On certain occasions, it may be possible for the platoon 2 IC to lead one section into position).
- (iii) Peg out the fixed lines for the guns on arrival in the section areas. He will do this as shown in Lesson 107.
- (iv) Give orders to the driver operators.
- (v) Carry out quick liaison with the rifle company commanders.
- (vi) Contact battalion HQ to obtain the latest information.
- (vii) Carry out detailed liaison with the rifle company commanders.
- (viii) Return to his sections and pass on the full information to them.
- (ix) Inspect the section areas at first light and confirm their tasks.
- (x) Contact the battalion commander and consider any necessary resiting of the sections.

Phase IV—The co-ordination of the machine gun fire task

5. The machine gun fire plan will normally be on a battalion level. Thus, the platoon commander should keep this foremost in his mind when siting his sections. At the same time, he should try to co-ordinate the battalion task allotted to him with any tasks desired by the rifle company commanders.

LESSON 88—MODIFICATIONS FOR DEFENCE

1. The battle procedure duties shown below apply to the occasion when it is desired to occupy two or more section positions—direct fire. Should it be required to occupy an indirect platoon position, the same general principles will apply.

NOTE.—If the time is short the platoon commander may delegate the reconnaissance of one or even two section areas to the platoon 2 IC. In this case the normal duties of the platoon 2 IC will be undertaken by the platoon sergeant.

2. The platoon commander.

His duties are the same as in battle procedure (Lesson 84) until he has made his time plan; then they will be modified as follows: He will:—

- (a) Write a normal message to the platoon 2 IC except that it will include orders for all NCOs less one No. 1 per section to come to an RV for orders. This message will be sent off by the platoon orderly who, if possible, will lead the platoon and NCOs to their respective RVs.
- (b) Move to his area with “ R ” group, place it under cover and make his reconnaissance plan.
- (c) Reconnoitre the area allotted to him for the following items:—
 - (i) Exact gun positions and control posts.
 - (ii) Section RVs.
 - (iii) Platoon HQ.
 - (iv) Platoon OP.
 - (v) Vehicle position (dependant on battalion commander's orders.)
 - (vi) Arrangements for local protection.
 - (vii) Position from which to give out orders.
- (d) On completion of his reconnaissance, give out orders to all NCOs less the Nos. 1 left with the platoon. They will include:—

Information.

Enemy	(As much information as he knows at this stage about own troops near section areas and near where fixed lines will fall).
Own troops	

Intention.

Method.

Direct fire.—Dismounted action.

Each section:—

Area and RV.

Task or tasks.

Arc of fire.

Approximate area for temporary fixed line.

All sections:—

Rate of fire on fixed lines.

Reservation of ammunition for particular tasks.

Digging.

Arrangements for vehicles.

Local protection (3.5-inch RLs, 2-inch mortar, Brens, and rifles).

Orders as to when to open fire,

Administration.

RAP.

Intercommunication.

Battalion HQ.

Platoon HQ.

Platoon OP.

SOS signal (if known).

Synchronize watches.

Be in action by.....hrs.

Any questions?

- (e) Move to each section area in turn to point out to the section commanders their exact gun positions and control posts, and to confirm their tasks on the ground.
- (f) Return to the platoon OP and give orders to the driver operators including:—
 - 31 set.
 - 88 set.
 - Telephones.
- (g) Satisfy himself that the platoon is in action and report the fact to battalion HQ together with the location of platoon HQ in code.
- (h) Hand over the platoon to the platoon 2 IC and carry out liaison with the companies near the platoon area and near where the fixed lines are to fall. He will find out from where the SOS signal will go up, and discuss the co-ordination of digging, wiring, mining and communications. As he returns to the platoon, he will inspect the section positions from the enemy's point of view.
- (j) Give out further orders to the platoon 2 IC and section commanders including:—
 - (i) Detailed disposition of own troops.
 - (ii) Areas for permanent fixed lines.
 - (iii) Area from which the SOS signal will go up.
 - (iv) Location of neighbouring HQ.
 - (v) Digging plan.
- (k) Give orders to the driver operators concerning extra communications that may be required with the rifle companies.
- (l) Organize the digging of the platoon OP and carry out any further liaison and reconnaissance which may be necessary for alternative positions.

4. The platoon 2 IC or sergeant.

On receipt of the message from the platoon commander he will:—

- (a) Pass on brief information to the Nos. 1.
- (b) Lead the platoon to the RV given in the message, and then take forward the senior Nos. 1 to the platoon commander's RV for orders.

- (c) On completion of orders, return to the platoon with the Nos. 1.
- (d) Establish platoon HQ.
- (e) Arrange for the carriers to be sent to the vehicle position under command of the platoon sergeant (if available).
- (f) Arrange for the siting of the 3.5-inch RLs, Brens and 2-inch mortars.
- (g) Supervise the digging of the platoon HQ and the OP.
- (h) If necessary, carry out local liaison.

5. The section commander.

In addition to the normal duties for the occupation of a position by day (Lesson 84), he will:—

- (a) Order the rangetaker to make out a range card.
- (b) Order the guns to be mounted to the flank of the permanent positions to enable digging to be carried out, and arrange for them to be laid on temporary fixed lines until the permanent fixed lines are decided upon.
- (c) See that all stores are removed from the carriers and send the carriers to the platoon sergeant at platoon HQ.
- (d) Arrange for guns and stores to be concealed until they can be dug in.
- (e) Organize:—
 - (i) Sentries and duty roster.
 - (ii) Alarm signal.
 - (iii) Positions for the higher numbers on receipt of the alarm signal or at "Stand To."
 - (iv) Action to be taken on receipt of the SOS signal.
- (f) Pass on full information to the section.
- (g) Having received further orders from the platoon commander, he will organize the permanent fixed lines, the digging of the permanent position, and pass on full information to the section.
- (h) If necessary, carry out local liaison.

6. The senior Nos. 1.

In addition to their normal duties they will be responsible for leading their respective sections from the platoon RV to the section areas.

LESSON 89—THE INSPECTION OF A SECTION AREA IN DEFENCE

1. The following are some of the points that a platoon commander will check when he inspects a section position in defence. The list is not comprehensive and must be regarded only as a guide.

- (a) Is the section commander "In the picture"?
 - (i) Does he know the latest information about the enemy?
 - (ii) Own troops.
 - Does he know their positions?
 - Has he made contact with those nearest?
 - Has he full information about patrols?
 - Has he arranged for protection by neighbouring troops where necessary.
 - Does he know position of nearest HQ and RAP?

(b) Section personnel.

- (i) Has all information been passed on to every man—especially regarding SOS?
- (ii) Does everyone know his action on alarm signal.
- (iii) Are all administrative instructions fully understood—including sanitary arrangements?
- (iv) Do neighbouring troops know whereabouts of lines of fire and fixed lines, and have arrangements been made to prevent their crossing them?
- (v) Does everybody know position of platoon HQ, platoon OP, and necessary routes to them?

(c) The task.

(i) Arc.

Can both guns cover the arc?

Organization of arc.

Range cards; areas in which it is unsafe to fire marked in.

(ii) Fixed line.

Location and safety.

Aiming posts planted and lensatic sight adjusted.

Deflection drums and direction dial at correct settings.

Range and angle of sight left on respective drums and recorded.

Aiming lamps ready for use.

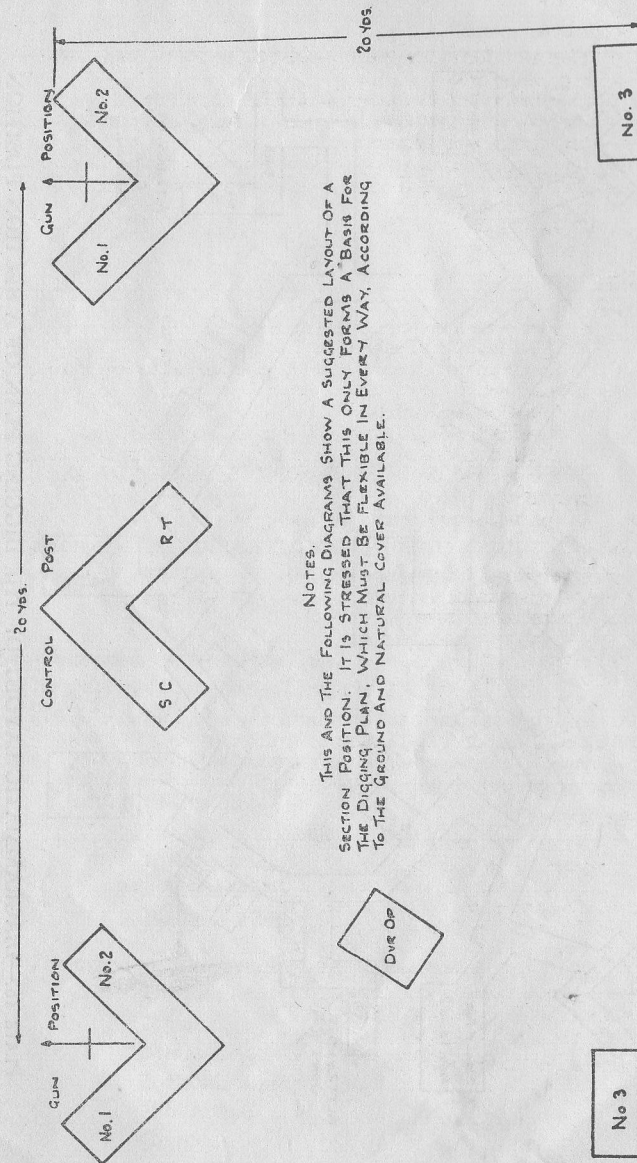
(d) Stores.

- (i) Everything off the carriers.
- (ii) All ammunition handy for the guns and dug in.
- (iii) Spare parts cases complete.
- (iv) Oil in traversing handles.
- (v) Stores not required at guns concealed in convenient and tidy dumps and dug in.
- (vi) Water; condenser cans full and source of supply reconnoitred.
- (vii) Cases, cans oil, complete.
- (viii) Spare parts box; all breakages replaced.
- (ix) Telephones in good order.

(e) Readiness.

- (i) Sentry (or sentries) posted; gas detectors, binoculars, compass, notebook and pencil.
- (ii) Duty rosters for sentries and digging made out.
- (iii) Digging properly organized and in progress or completed.
- (iv) Guns camouflaged as necessary.
- (v) Guns half loaded and thumb-piece pressed.
- (vi) SOS and place from which it will be sent up.
- (vii) Alarm signal and "Stand-to" position.
- (viii) Routine times for "Stand-to."
- (ix) All round defence.

2. Diagrams of section layout.



NOTES.
THIS AND THE FOLLOWING DIAGRAMS SHOW A SUGGESTED LAYOUT OF A SECTION POSITION. IT IS STRESSED THAT THIS ONLY FORMS A BASIS FOR THE DIGGING PLAN, WHICH MUST BE FLEXIBLE IN EVERY WAY, ACCORDING TO THE GROUND AND NATURAL COVER AVAILABLE.

PLATE 17—Section layout.—The main principle involved is that each man will dig his own fire trench which will eventually be developed to fit in with the section layout.

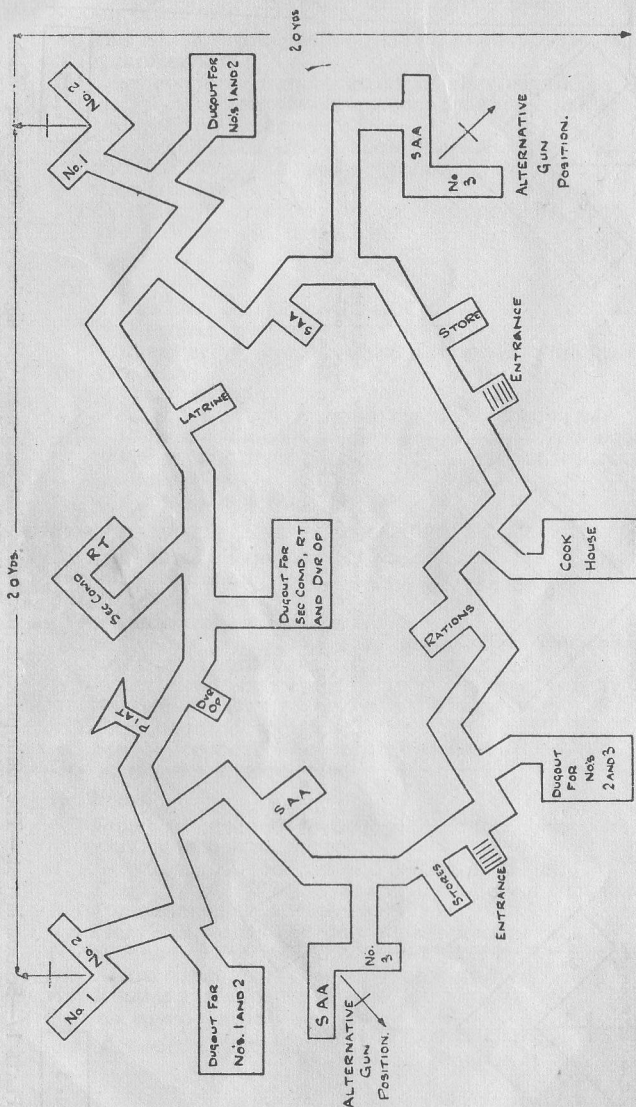


PLATE 18.—DIAGRAMMATIC LAYOUT OF THE DIGGING PLAN OF A SECTION POSITION

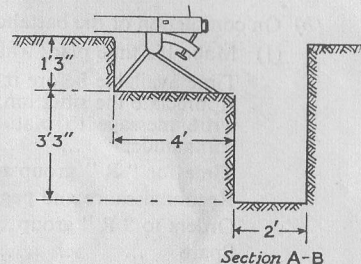
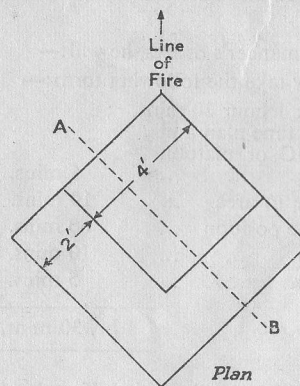


PLATE 19—Medium machine gun emplacement.

LESSON 90—MODIFICATION FOR THE OCCUPATION OF A POSITION BY NIGHT, WHEN A DAYLIGHT RECONNAISSANCE CAN BE MADE

Platoon position—indirect fire

1. The platoon commander or platoon 2 IC.

- (a) On receipt of the warning order from the battalion commander he will proceed with his normal "R" group (Lesson 83, para 2) to the battalion commander's RV for orders. However, should the platoon be heavily committed, the following minimum "R" group will suffice:—

Platoon commander or platoon 2 IC.

1 Rangetaker.

1 Private.

Platoon orderly.

The essential stores required are as follows:—

Director.

2 gun flags

2 zero posts

2 direction pegs

White tape.

Compass.

} per section.

(NOTE: Except where stated, it is assumed throughout this lesson that the normal "R" group is available).

(b) On completion of the battalion commander's orders, he will:—

(1) Make his time plan, which may take the following form:—

Time available before it is dark	1 hour 30 mins.
Appreciate the situation, make time plan and write message to platoon 2 IC or platoon commander	5 mins.
Time for "R" group to move to area	10 mins.
Reconnaissance and pegging the position	60 mins.
Orders to "R" group	10 mins.
Spare	5 mins.
	<hr/>
	1 hr. 30 mins.

(It is essential for the platoon commander to allow himself at least one hour's daylight in his platoon area to complete the pegging of the position and the collection of the necessary data).

(ii) Send off a message to the platoon giving:—

Brief information.
Platoon role.
Time for the move of the platoon from its present position.
Platoon RV and route, if necessary.
His own actions and whereabouts.

This message will be conveyed by wireless or by the platoon orderly, who will return to the platoon commander.

(iii) Move with his "R" group to the platoon area which has been allotted, and make his reconnaissance plan.

(iv) Give orders to one of the rangetakers.

(v) Carry out his reconnaissance and decide on as many of the following items as may be necessary:—

Gun position, and the placing out of the pegs on parallel lines.
Direction of the zero line for the pivot gun.
Rendezvous for the platoon as near as possible to the gun position, bearing in mind the noise of carrier movement by night.
Route from RV to the gun position.
Position for platoon OP and HQ if the platoon is to remain in action during the following day.
Position for vehicles.
Local protection.

(vi) Peg and tape the position and collect the necessary data, assisted by the section commanders.

(vii) Give out orders to the "R" group containing as many of the following points as are necessary:—

Information.

Enemy
Own troops

Intention.

Method.

Indirect fire.
Gun position.
Platoon RV.
Vehicle position.
Local protection.
Concealment and digging.
Sentries.

Administration.

Intercommunication.

Platoon OP and HQ if necessary.
Battalion and rifle company HQ.
Synchronize watches.
H hour.....hrs.
Any questions?

(viii) Post the rangetakers to act as sentries on the pegs. In addition it may be possible for them to prepare the gun positions.

(ix) Effect liaison with the neighbouring rifle companies.

(x) Return to the platoon with the "R" group less the rangetakers.

(xi) Prepare the fire control charts and explain them.

(xii) Issue orders to the platoon.

(c) On carrying out the occupation, he will:—

(i) Lead the platoon to the platoon RV on carrier, and order section commanders to prepare for night firing.

(ii) Lead the platoon from the RV to the gun position on foot.

(iii) If the section commanders were not present on the daylight reconnaissance point out to them the gun flags and direction for the guns to be mounted. (Sections will now occupy as in section drill night firing).

(iv) Move to the rear and centre of the gun position, make the necessary corrections for climatic conditions to the fire control charts, and issue them to the section commanders.

(v) Direct the fire of the platoon.

Section positions—direct fire

There are certain modifications to the battle procedure shown above should the platoon be required to occupy direct fire positions by night.

They are as follows:—

2. The platoon commander or platoon 2 IC.

Having moved to his area with his "R" group he will:—

(a) Make his reconnaissance plan and carry out a reconnaissance for:—

Section areas and RVs.
Gun positions and control posts.
Arcs of fire and fixed lines.
Platoon OP and HQ.
Platoon RV.
Vehicle position.

(b) Give orders to the "R" group as shown in Lesson 84, para 2(f), including fixed lines.

(c) Visit each area in turn, give orders to the rangetaker, peg the positions, and collect the necessary data. (If time is short, the platoon commander may have to delegate the pegging of one position to the senior section commander).

(d) The remainder of the platoon commander's duties conform with those shown above for a platoon position indirect fire.

3. During the occupation, the duties of various personnel are as follows:—

(a) On arrival at the RV, section commanders will lead their sections to the gun positions and get them into action.

(b) If the section commanders were not present during the reconnaissance, the platoon commander, or the platoon 2 IC if he reconnoitred the position, will take forward one section to its gun position, and point out the gun flags and direction pegs to the section commander. He will then return to the RV and do the same for the other sections.

(c) Communications will be laid out as normal.

(d) When necessary, the platoon sergeant will supervise the collection of the vehicles and take them to the pre-arranged place.

LESSON 91—MODIFICATIONS FOR RELIEFS IN THE LINE

1. The relief of one unit by another is probably the most common operation carried out in the line. It is an operation normally accomplished by night. Therefore, to ensure success and to avoid confusion, it is essential to make detailed plans based on a preliminary daylight reconnaissance.

2. *Daylight reconnaissance.*—An advance party will be sent to the area to be taken over and it will be responsible for all preliminary daylight reconnaissance. It is desirable for this advance party to be identical with the normal "R" group but very seldom will the situation allow this. The platoon commander should endeavour to command the advance party, but again this may not be possible and the platoon 2 IC or sergeant will probably be put in charge. Other personnel should be the platoon orderly and a man from each section. This is the smallest advance party that can work with any degree of efficiency.

3. The duties of the advance party.

The advance party commander will obtain information as follows:—

(a) Complete dispositions of the enemy and own troops, enemy habits, patrols, danger spots etc.

(b) The disposition of the whole platoon area including alternative positions.

(c) Runners routes and communications plan.

(d) The arc of fire, fixed lines and SOS signals.

(e) Take over range cards and information on maps.

(f) Feeding and sanitary arrangements.

(g) Evacuation of casualties.

(h) Alarm signals.

In addition to the above, he will, if necessary to facilitate the relief, take compass bearings, pace distances and lay tape.

He will then pass on information to the remainder of the advance party and show them the layout of the platoon area detailing two men to act as guides for the sections from the pre-arranged RV to the gun positions; these guides should be helped by members of the outgoing platoon.

4. The relief.

(a) While the relief is being carried out, both platoons will "Stand To."

(b) The advance party will meet the incoming platoon at the pre-arranged RV.

(c) Guides found by the outgoing platoon and, if available, duplicated by the incoming platoon, will guide their respective sections into position.

(d) Full communication must be ensured before the relief is complete.

(e) Should an emergency situation develop during the relief, the commander of the outgoing platoon or section will take command.

(f) Absolute silence throughout the operation is essential.

(For details regarding the relief of guns see Lesson 74).

LESSON 92—MODIFICATIONS FOR THE WITHDRAWAL

1. *General.*—The duties laid down in this lesson refer to the occasion when the withdrawal has been premeditated and the situation allows a comprehensive reconnaissance to be made of the next position in rear.

In other circumstances a platoon may have to occupy, at short notice, a series of intermediate positions. The platoon commander and section commanders, may, therefore, have little or no opportunity for any detailed reconnaissance and must act in accordance with the immediate needs of the situation.

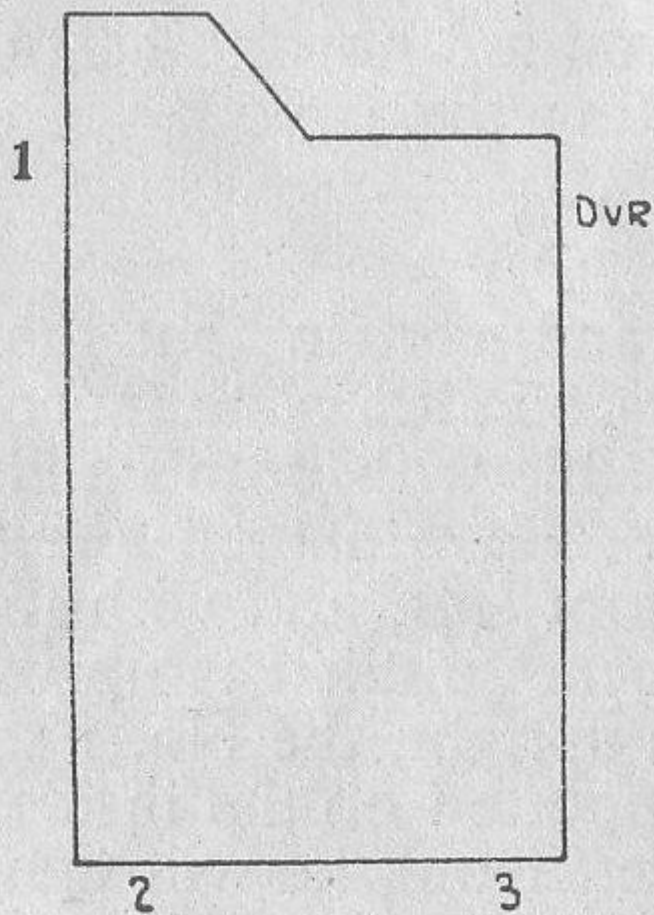


FIG 6

The preparation for the withdrawal from the present position

2. *The platoon commander.*—On receipt of the warning order that a withdrawal is to take place, he will:—

- (a) Send it out to the sections and order the "R" group to report to platoon HQ.

The "R" group will normally consist of:—

- (i) When the platoon is liable to be in contact with the enemy:—

Platoon 2 IC or platoon sergeant.
1 rangetaker from one section.
1 man from each of the other sections.
Platoon orderly.

- (ii) When the platoon is not liable to be in contact with the enemy:—

Platoon commander or platoon 2 IC, remainder of the normal platoon "R" group.

(Note.—For the remainder of this lesson, it is assumed that the platoon is already in action, and that the minimum "R" group only is available).

- (b) Give orders to "R" group including:—

Brief information.

Intention.

Method, RV, time and route to meet the battalion "R" group commander (normally battalion 2 IC).
Instructions to reconnoitre the new platoon area, and to send back information to the platoon by means of wireless or the platoon orderly.

This party, with the exception of the platoon orderly, will travel in the platoon 2 IC jeep and trailer or platoon commander's carrier. Sufficient tools should be taken to enable the reconnaissance party to make hasty emplacements or to improve the existing cover, together with the director, gun flags, zero posts and direction pegs.

- (c) Carry out liaison with the rifle company commander under whose command the platoon will be for the final withdrawal (if applicable).

- (d) Reconnoitre for and decide on:—

(i) Platoon RV in rear of the position.

(ii) Route for sections and platoon HQ to the RV.

(iii) Route to battalion or company RV.

(iv) The method of withdrawal.

(v) How the order for the final withdrawal will be given.

(vi) Time for the withdrawal of telephones etc, if laid.

- (e) Arrange for the carriers to move forward to the Sections RVs at the appropriate time.

- (f) Issue orders to section commanders as follows:—

Information.

Enemy.....

Own troops.....times of withdrawal.

Intention.

Method.

Method of withdrawal.

Timings and routes.

Platoon RV on present position.

Battalion or company RV on present position.

The method by which the order to withdraw will reach the section commanders.

Commence thinning out at.....hrs.

Platoon HQ will withdraw at.....hrs.

Orders re LMGs and 3.5-in RLs.

Battalion RV and platoon RV on new position and route. (If this is known at this stage).

Position of the platoon commander during the withdrawal. (Usually with the last section out of action).

Intercommunication.

Synchronize watches.

Any questions?

- (g) Move to platoon HQ and arrange for its withdrawal.

3. *The section commander.*—On receipt of orders concerning the withdrawal, he will:—

- (a) Ensure that the route to the platoon RV is reconnoitred.
(b) Make arrangements for the removal of any surplus stores to the carriers when the time for thinning out arrives.
(c) Decide on his plan for the withdrawal.
(d) Pass on full information to all ranks.

The reconnaissance of the new position

4. The platoon 2 IC.

- (a) On receipt of orders from the battalion second in command on the new position, he will:—

- (i) Make his time plan.

- (ii) Carry out a detailed reconnaissance for:—

Section areas and RVs.

Gun positions and control posts.

Arcs of fire and fixed lines.

Platoon OP and HQ.

Platoon RV.

Routes from the platoon RV to the section areas.

Vehicle position.

(If it is required to use indirect fire or carrier action, then slight modifications will be necessary to the reconnaissance).

- (iii) Send off a message to the platoon commander by wireless or by means of the platoon orderly, containing:—

Very brief information about own troops.

Intention.

Method.

Section areas.

Platoon RV.

(All map references should be in code, and every effort should be made to keep the message as short as possible. If time is very limited then the only essential is the platoon RV).

- (iv) Give orders to the "R" group. These orders should be as shown in para 4 (a) (ii) above and should be noted down on paper.
- (v) Give the normal orders to the rangetaker from each section area in turn. Then point out the gun positions, pegging them as he does so.

Note:—If it is anticipated that section areas are likely to be widely separated or that there will be very little daylight left for reconnaissance all rangetakers should be taken in the "R" group.

- (vi) Leave the rangetaker and the other man to prepare the gun positions, and to act as sentries on the gun pegs.
- (vii) Carry out liaison with the neighbouring recce parties.
- (viii) Prepare and dig the platoon OP.
- (ix) Move to the platoon RV to await the arrival of the platoon.
- (b) If the platoon 2 IC found from his time plan that little time was available before it became dark, he will modify his battle procedure duties as follows:—
- (i) As soon as possible, make a general appreciation and give orders to the rangetaker or rangetakers to prepare range cards for all sections.
- (ii) Carry out a quick recce for routes to and from the platoon RV.
- (iii) Send a message to the platoon commander by the platoon orderly if time permits.
- (iv) Carry out his detailed reconnaissance, and the other battle procedures enumerated in sub-para (a) above.

The withdrawal

5. *The platoon commander.*—When the time for withdrawal arrives, he will:—

- (a) Ensure that the order to withdraw reaches the section commanders.
- (b) Satisfy himself that the withdrawal has been carried out.
- (c) Take charge of the platoon at the platoon RV and lead it to the new position.

6. *The section commander.*—

(a) When the time for thinning out arrives, he will:—

- (i) Order the carriers to be brought up from the section RV as close as possible to the gun position.
- (ii) Order Nos. 3 and the drivers to take any unnecessary stores back to the carriers.

(b) When the time to vacate the position arrives, he will:—

- (i) Order the guns and remaining stores to be taken back and loaded on to the carriers.
- (ii) Lead the carriers back to the platoon RV.

(c) When the withdrawal is by night, he will:—

- (i) Ensure that carriers are not brought up so close to the position as to jeopardize safety through noise.
- (ii) Allow sufficient time for the unnecessary stores to be taken quietly to the carriers.

D—The occupation of the new position

7. *The platoon 2 IC.*—On arrival of the platoon at the platoon RV, he will:—

- (a) Contact the platoon commander and personally lead into position one section and the platoon OP, while his driver and orderly lead in the other sections.
- (b) Give orders to the driver operators re 31 set and 88 set and the position of the platoon commander's carrier.
- (c) Pass on full information to the section commanders and the platoon commander, taking the latter over the complete layout of the platoon.
- (d) Hand over the platoon to the platoon commander when the occupation has been completed.

8. *The sentries.*—On arrival of their sections, they will:—

- (a) Contact the section commanders and lead the sections to the gun positions.
- (b) Pass on brief information to the section commanders (gun positions, control posts, direction pegs, zero posts, 1st target etc).
- (c) Assist the section commanders in getting the guns into action.
- (d) Pass on full information to the section commanders.
- (e) If necessary, lead the vehicles back to the vehicle position, and report to the platoon 2 IC or platoon sergeant for further orders.

APPENDIX II

MMG RANGE COURSES AND SAFETY PRECAUTIONS

General

1. This appendix contains the instructions essential for firing the Vickers Machine Gun and should be read in conjunction with Small Arms Training Vol V, War Supplement, Small Arms Ranges Layout, Safety and Equipment 1945.

2. Range Practices 1 to 9 will be fired during the training of recruits and thereafter such practices as may be required for further training as circumstances permit and ammunition allows.

3. Subject to the soldier passing tests of Elementary Training Nos. 1-11 as laid down in Lesson 60 he will be practised in Parts III and IV and also be eligible to be tested in the Skill-at-Arms practices as laid down in Appendix III.

Preliminary training

4. The training value obtained from firing with ball ammunition will depend on the thoroughness with which preliminary training has been carried out.

Particular attention is directed to the following:—

(a) *Tests of elementary training.*—Range practices are a waste of time and ammunition unless those taking part have reached a certain standard of efficiency.

The tests of elementary training give the required standard. They are designed to:—

(i) Ensure that men have reached an efficient standard before they begin range practices.

(ii) Prevent any detail of elementary training being over-looked.

A record of the results of individual tests will be kept by company commanders and inspected periodically.

It is important that teaching should not be confused with testing. In the former, men are instructed by explanation and demonstration, followed by execution; in the latter, men are questioned or ordered to carry out a certain test, after due warning, without assistance, and they either pass or are put back for further instruction. The conditions of each test will be explained to individuals before it is carried out.

Supervision

5. An officer will normally supervise the firing point at all times, but in exceptional circumstances where no officer is available, commanding officers may give authority for supervision by warrant officers, or, if they are not available, by qualified NCOs not below the rank of sergeant. Duties in the butts may be carried out by NCOs.

The supervising officer, warrant officer or NCO is responsible that range standing orders, particularly with regard to safety, are complied with.

Field firing

6. Exercises with ball ammunition on the field firing range are the culmination of weapon training. The field firing range provides conditions most nearly akin to war and all shooting on other ranges will be regarded merely as a means to obtain efficiency in this final test.

Officers responsible will visit the range and prepare the practices, having regard to the lessons to be taught, target facilities, safety precautions and ammunition available. The value of the exercise will depend on sound preparation, clear explanation to those taking part, and a well-conducted criticism at the conclusion. Simple problems should be designed so that all actions of the fire unit are such as would be possible and likely in war.

Officers or non-commissioned officers will be detailed to each fire unit to watch its action and act as umpires, they should conform to the movements of the section. They will be responsible to the officer superintending for safety precautions, but, apart from ensuring that these are observed, they will not interfere with the actions of firers or leaders.

Times taken to pick up a target and bring it under effective fire should be recorded and the number of hits obtained also checked.

At the conclusion, a conference will be held. The officers or NCOs who accompanied each sub-unit as umpires should deal with detailed points. The superintending officer, after obtaining the necessary information from the butts and from the umpires, should explain the enemy action, comment on the means taken to combat it, and bring out the main lessons of the exercise.

Exercises should be restricted to sections and platoons.

Safety precautions

All ranges.

(a) Firing will not take place until the danger flags are hoisted and look out men posted according to the bye-laws and standing orders.

(b) A red danger flag will be hoisted at the butts as a warning to cease fire. The flag will be kept up until the whole of the butt party is under cover. No one will leave the butts until the cessation of fire has been notified from the firing point. When cessation of fire is required, the superintending officer at the firing point will normally give the order.

(c) A red flag will be hoisted at the firing point when no firing is taking place. It will always be hoisted when the danger flag is flying at the butts.

- (d) No one, except the firers, the instructors and the officers on duty, will be allowed on the firing point.
- (e) If firing is suspended during a practice, or whenever the danger flag is hoisted at the butts, locks of machine guns will be removed from the lock guides (guns clear).
- (f) No one will be in front of the feed block when the gun is firing.
- (g) After firing, live rounds will be separated from empty cases and collected, under the orders of the superintending officer.
- (h) An officer will inspect all guns and equipment before they are removed from the firing point, to ensure that they are unloaded and that the men are not in possession of ammunition. A further inspection will take place before the company or party leaves the range, and AF B 159A will be completed.
- (j) Repairs and replacements will not be carried out until a gun is clear. No one except the gun numbers authorized to be on the firing point by the conditions of the practice will be permitted to touch the gun without permission when a stoppage occurs.
- (k) No guns will be loaded without orders from the superintending officer.
- (l) Drill cartridges will not be taken on the range, except for use in stoppage practices. In this case the drill cartridges will be taken to and from the range under the orders of the company etc, commander.

8. 30-yards range.

- (a) No more than four machine guns will be fired at the same time on the standard 30 yards range.
- (b) During the firing of machine gun practices, the superintending officer may make special arrangements to call those waiting to fire up to a position from which they can hear the instruction and criticism, but even then they must be at least five yards in rear of the firer.
- (c) No target will be placed within four feet of the sides of the bullet catcher.
- (d) Representative targets will be placed at the bottom of the bullet catcher.
- (e) Landscape targets will be placed so that the skyscreen is at the bottom of the bullet catcher and the picture below it.
- (f) Steel plates and moving targets are not allowed on a 30-yards range.

MMG COURSE

PART I

TO BE FIRED ON THE 30-YARDS RANGE

Note.—The practices in Part I should be fired practice by practice as the appropriate stage of training is reached.

Practice No.	Practice	Target	Rounds	Detail	Remarks
1	Service bursts	Stop butts	50	<i>Aim:</i> To give the firer experience in firing service bursts (i) Rounds will be spaced in two groups of 25 rounds (ii) This practice will be fired on conclusion of the 30 yard range characteristics demonstration (iii) The instructor will load and aim the gun at a point on the stop butts	It should be explained that this is the normal burst on Service, though such bursts are not fired during Part I
2	Application of service bursts (a)	3 coloured plates	75	<i>Aim:</i> To give the firer further practice in the application of service bursts, also to give him confidence in himself and the weapon (i) Rounds will be spaced in three groups of 25 rounds (ii) Gun will be loaded and sights set at the required elevation to hit the target (iii) The order "Fire" will be given. (iv) The firer will fire a service burst at each target	This practice should be carried out as soon as the firer has had practice in Lessons 35 and 52
	(b)	Landscape Tgt. See details of MMG tgts Fig II.	75	(i) Harmonization of sights will be carried out before this practice begins (ii) Rounds will be spaced in three groups of 25 rounds (iii) Three targets will be indicated to the firer (iv) The gun will be loaded and sights set at the harmonized range (v) The firer will fire a service burst at each target	

Practice No.	Practice	Target	Rounds	Detail	Remarks
3	Traversing	Horizontal and oblique lines on a white screen. See details of MMG targets serial No. 2	100	<p><i>Aim:</i> To practise the firer in the regulation tap for traversing a horizontal and an oblique target</p> <p>(i) Rounds will be spaced in four groups of 25 rounds</p> <p>(ii) Bursts of 5 rounds will be fired. The instructor will tap the firer after each burst of 5 rounds</p> <p>(iii) The firer is ordered to traverse from one end of the line, the order "Stop" being given after 25 rounds have been fired. He is then ordered to traverse from the other end</p> <p>(iv) The procedure is carried out first on the horizontal and then on the oblique lines.</p>	<p>(i) The firer will test his clamp before the practice</p> <p>(ii) The MPI of the groups should be 4 inches apart laterally</p>
4	Indirect fire Practice	White screen with aiming mark. See Details of MMG Targets Serial No. 1	15	<p><i>Aim:</i> To practise the firer using the dial sight</p> <p>(i) Rounds to be spaced in three groups of 5 rounds</p> <p>(ii) The aiming post is put out and the dial sight fixed to the gun</p> <p>(iii) The firer will be ordered to lay with the tangent sight on the aiming mark</p> <p>(iv) The aim is checked by the instructor and the tangent sight lowered</p> <p>(v) The range drum on dial sight will be set at 400 yards and the bubble levelled by means of the angle of sight drum; the lensatic sight will then be aligned on the aiming post</p> <p>(vi) The orders "Load" and "Fire" will be given</p>	<p>(i) After each correction has been applied the instructor will check the aim before allowing the practice to continue</p> <p>(ii) The MPI of the second group should be displaced 4 inches each 15 minutes of switch R or L, of the first group</p> <p>(iii) The MPI of the final group should be displaced from the second as above, and approximately 8 ins. above or below</p>

Practice No.	Practice	Target	Rounds	Detail	Remarks
4— <i>continued</i>					
5 (a)	Immediate Action (Day)	White screen with aiming mark	20	<p>(vii) After firing the first group the firer will be given a switch of not less than 20 minutes and not more than 30' in multiples of 10 minutes, Right or Left, before being given the order to fire the second group</p> <p>(viii) Before firing the final group the firer will be given, in addition to a switch as for second group, a range correction of 400 yards. The bubble must be levelled by means of the elevating wheel before firing this group</p>	<p>(iv) The firer will keep the thumbpiece pressed as for service bursts</p>
(b)	Immediate Action (Night)	Plain white screen	20	<p><i>Aim:</i> To practise immediate action by day</p> <p>(i) The belt will be prepared beforehand with a series of stoppages</p> <p>(ii) The gun will be mounted, loaded, and laid on the aiming mark</p> <p>(iii) The order "Fire" will be given</p> <p>(iv) The gun will be knocked off its alignment by the instructor as each stoppage occurs</p> <p><i>Aim:</i> To practise immediate action by night</p> <p>(i) The belt will be prepared beforehand with a series of stoppages</p> <p>(ii) The gun will be mounted, dial sight fixed and aiming lamp put out</p> <p>(iii) The gun will be laid, using the tangent sight, on the centre of the screen which will be illuminated by a lamp</p> <p>(iv) When the range is clear, the order "Load" will be given</p> <p>(v) The range drum will be set at 400 yards and the bubble levelled by means of the angle of sight drum; the lensatic sight will be aligned on the aiming lamp</p> <p>(vi) The order "Fire" will be given</p> <p>(vii) The gun will be knocked off its alignment by the instructor as each stoppage occurs</p>	<p>Accuracy in relaying will be judged from the size of the complete group</p> <p>(i) Accuracy in relaying will be judged from the size of the complete group</p> <p>(ii) This practice must be fired in darkness</p>
<i>Total Part I.</i>			355		

PART II

TO BE FIRED ON OPEN RANGE AT 600 YARDS

- Notes:— (i) The practices of this part will be fired consecutively.
(ii) Although no form of scoring is shown, in Practices 7, 8 and 9 the firer should be told how many hits he has obtained on the target.

Practice No.	Practice	Target	Rounds	Detail	Remarks
6	Registration	Prepared patch on stop butts	75	<p><i>Aim:</i> To register the correct range and wind allowance before applying fire</p> <p>(i) Rounds will be spaced in groups of 25</p> <p>(ii) The gun will be mounted and loaded. On the order being given for the practice to begin the firer will engage the patch and register the range and wind allowance necessary to hit the centre of it</p>	If observation of strike is difficult, the position of the MPI of each burst, with reference to the centre of the patch, will be signalled from the butts on a 4 foot target hoisted for this purpose
7	Obscuration of target	4 feet	25 to be fired in one burst	<p><i>Aim:</i> To test the man in engaging a target using an aiming mark</p> <p>(i) The gun will be mounted and loaded</p> <p>(ii) The target will be indicated to the firer</p> <p>(iii) The range and order "Lay" will be given and the firer will set the sights and lay at the aiming mark</p> <p>(iv) The order "Pick up Aiming Mark" will be given, whereupon the firer will act in accordance with the procedure given in Lesson 72</p> <p>(v) The gun will be tapped off slightly and the elevating wheel turned by the supervising NCO</p> <p>(vi) On the command "Fire" the firer will engage the target with the aid of the gun aiming mark</p> <p>(vii) Time allowed—35 seconds</p>	

120

Practice No.	Practice	Target	Rounds	Detail	Remarks
8	Tapping Right and Left	Coloured screen. Details of MG targets. Serial No. 4	125	<p><i>Aim:</i> To test the practical application of fire on a target of little width</p> <p>(i) Rounds will not be spaced, but bursts of 25 rounds will be fired</p> <p>(ii) The gun will be mounted and loaded but not laid on the screen</p> <p>(iii) On the order "Fire" the firer will engage the target by tapping right and left one tap</p> <p>(iv) He will fire 5 bursts and may check his aim and if necessary relay twice only, immediately before the third and fifth bursts</p>	
9	Service application	4 feet	75	<p><i>Aim:</i> To test the firer in mounting his gun in the lowest service position and engaging a fleeting target</p> <p>(i) Gun and tripod will be laid on the ground about 3 paces in rear of the spot on which the gun is to be mounted. Tripod on the left of the gun, legs to the rear, rear leg set for the sitting position. Sights at zero. Ammunition liner and condenser can will be in a convenient position on the firing point</p> <p>(ii) The position at which the firer's target will appear will be indicated to him</p> <p>(iii) On a signal from the firing point the target will be hoisted, the exposure will be timed from the butts</p> <p>(iv) As soon as the target appears the gun will be brought into action in the lowest service position and fire open on the target without further word of command</p> <p>(v) Time allowed—150 seconds</p>	
<i>Total Part II.</i>			300		

121

DETAILS OF MMG TARGETS

122

Serial No.	Name	Details	Remarks	Practices for which required
1	White screen with black aiming mark	Dimensions about 3 ft 6 ins long by 2 ft 6 ins high	(i) The size of these screens need not be exact (ii) Aiming mark is not necessary for Practice 5 (b)	4 and 5 (a)
2	White screen with horizontal and oblique black lines	Dimensions of screen about 3 ft 6 ins long by 2 ft 6 ins high. For details of lines, see Fig 1	(i) The size of this target need not be exact (ii) The black lines should be about $\frac{3}{4}$ ins wide	3
3	Prepared patch on stop butts	4 ft square prepared with cinders and sand to give observation of strike. One metal plate in centre as aiming mark	If observation of strike cannot be obtained as many plates as are desired may be used provided the area is not greater than 4 ft square	6
4	Coloured screen	24 ft long and 6 ft high, divided into three equal sections of 8 ft. Centre section coloured grey. Flank sections white	These targets are most conveniently constructed in three sections each 8 ft long and placed in sockets in stop butts	8
5	4 ft	4 ft classification target	—	7 and 9

123

TARGET FOR PRACTICE 3 M.M.G. COURSE

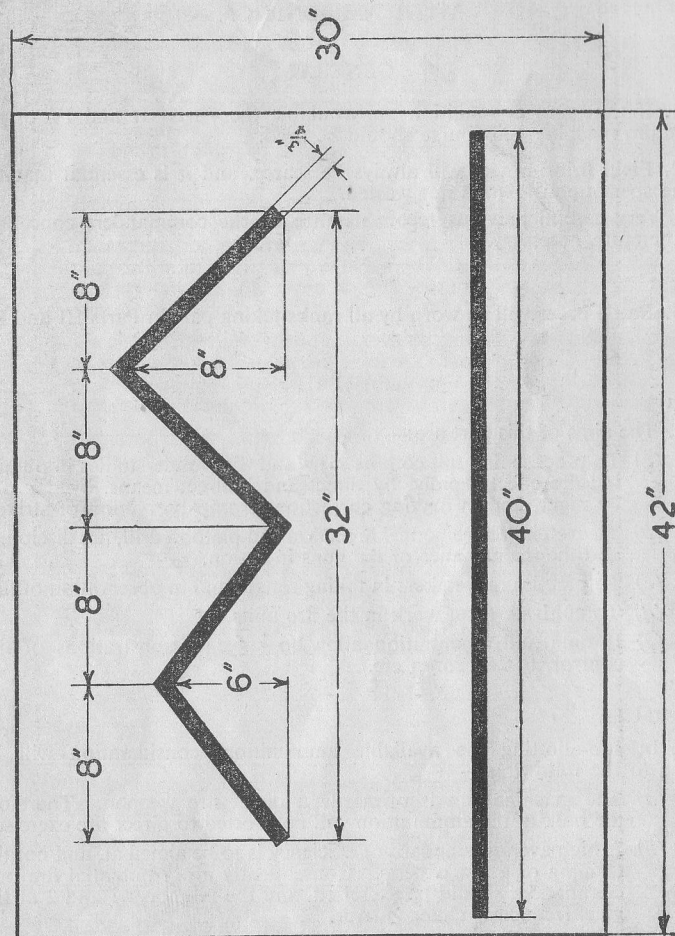


FIG 1.

PARTS III AND IV FIRE CONTROL AND TACTICAL EXERCISES WITH AMMUNITION

GENERAL

1. If time and ammunition are available the Parts III and IV of the medium machine gun course should be fired.

2. Field firing ranges will always be scarce, and it is essential that the time spent upon them is not wasted.

Very careful previous reconnaissance by the commanders concerned is therefore necessary.

Dress

3. Battle order will be worn by all ranks taking part in Parts III and IV.

PART III

Aim

4. The aims of this part are:—

- (a) To practise fire unit commanders and their understudies in obtaining fire effect rapidly, by direct and indirect means, by day and by night, and in making corrections from observation of strike.
- (b) To exercise the personnel in section and platoon drill, fire discipline, and the maintenance of the guns in action.
- (c) To practise rangetakers in taking ranges and in observation of fire.
- (d) To cultivate team work in the fire units.
- (e) If time and ammunition allow to stage demonstrations of fire control, beaten zones etc.

General

5. In sub-allotting the available ammunition, consideration will be given to the following:—

- (a) The machine gun is primarily a direct fire weapon. Therefore the bulk of the ammunition will be allotted to direct fire exercises.
- (b) A high average standard of efficiency is to be aimed at, and not the training of a few experts. Consequently every potential fire unit commander should be exercised, and the Numbers 1 and 2 at the guns frequently changed over.
- (c) The ammunition available may not be sufficient for the platoon to carry out all the methods of indirect fire. When firing indirect it may be necessary, owing to shortage of ammunition, to fire with the two flank guns of a platoon only though the whole of the drill should be carried out by the centre guns.

- (d) The value to be obtained from the exercises is greatly increased if the fire controller is able to observe the strike of the bullets. Observer and tracer ammunition, when available, are a useful guide as to whether or not fire effect has been obtained.
- (e) Continued repetition of Part III exercises will not produce results in proportion to the expenditure of ammunition, especially in conditions where observation of strike is not possible. Once the NCOs and men have been exercised in fire control and fire discipline in accordance with these notes, further ammunition available for Part III is best expended in exercises on a competition basis.
- (f) Demonstrations in methods of fire control, trajectories, beaten zones, safety limits, etc, are a valuable means of teaching the characteristics of the weapon. Such demonstrations require a proportion of tracer ammunition. If tracer ammunition is scarce, priority should be given to fire control exercises and not to demonstrations.
- (g) Every effort will be made to produce conditions resembling, as far as possible, those of active service. Where departure from service positions is unavoidable the reasons must be fully explained to those under instruction to prevent false lessons from being learnt.
- (h) Some of the exercises should begin with the guns on the carriers at the RV, so that the fire unit can be practised in the procedure for coming into and out of action.
- (i) It is suggested that as many as possible of the following should be exercised as fire controllers:—

Direct fire.—Five per section, ie, section commander, Nos. 1 and two others (preferably to include the rangetaker).

Indirect fire.—Two per platoon, ie, platoon commander and platoon sergeant.

Procedure

6. *Before the day of firing.*

- (a) The platoon commander carries out a reconnaissance, and selects firing areas to be used by the platoon for direct and indirect fire.
- (b) The platoon commander decides on the targets to be engaged by each fire controller and the stage from which each exercise will begin. Targets should be selected mainly in areas which are likely to give observation of strike, and should vary in shape and range to bring out the various methods of fire. Each exercise will be designed to bring out a definite lesson.
- (c) Two range cards will be prepared for each firing area, one for use by the officer conducting the exercise and the other for the fire controller, when it is desired that he shall commence the exercise with a range card already prepared.

7. On the day of firing—Direct fire

- (a) The platoon commander describes the arc of fire, safety arrangements, etc. All personnel to be exercised as fire controllers then assemble under the platoon commander and the remainder of the platoon under the platoon sergeant.
- (b) As far as possible the personnel of each section should be exercised together. Each fire controller should work with his own rangetaker, though all rangetakers of the platoon should be exercised in observation of fire.
- (c) The platoon commander selects the fire controller to be exercised, and indicates by means of a director the target to be engaged. The fire controller then proceeds to engage the target, his actions and orders being watched and heard by the other fire controllers. At the conclusion of the exercise the platoon commander discusses and comments on the action and orders of the fire controller. It may sometimes be advisable to stop the exercise temporarily to discuss certain points.
- (d) At the same time the platoon sergeant details the necessary gun numbers, who are frequently and systematically changed to ensure that they are all exercised. Throughout the exercise he takes charge of the spare gun numbers with whom he discusses, and comments on, the action of those actually manning the guns.

8. On the days of firing—Indirect fire.

- (a) The procedure for exercising the platoon in indirect fire is the same as for direct fire as detailed in para 7 above.
- (b) All rangetakers not actually being exercised assemble under a qualified instructor and practise observation of fire.

PART IV

Aim

9. The aims of Part IV are:—

- (a) To practise the carrying out of tactical machine gun roles using ammunition.
- (b) To provide platoon commanders with a means of testing the standard of field duties, fire control, fire discipline and drill reached by their sections.

10. Part IV is the final stage of platoon training.

The number of exercises which can be usefully carried out is limited only by the amount of ammunition available or by the time for which a field firing range can be allotted.

11. The phases of the battle which may be practised include the following:—

- (a) Attack—covering fire, consolidation and flank protection.
 - (b) Defence.
 - (c) Withdrawal.
 - (d) Any special form of warfare for which the unit is training, eg:—
Mountain warfare.
Desert warfare.
Static warfare (harassing and counter-preparation tasks and the firing of barrages).
- All exercises should be directed by the platoon commander.

Framing the exercises

12. An early reconnaissance of the area allotted should be carried out by the platoon commander. Each exercise will be based on a simple tactical situation.

13. The practical work of all schemes should open with the issue of the machine gun platoon commander's orders at the place at which they would be given out in war.

Range safety precautions and the safety of other troops taking part must always be borne in mind. The scheme should be so framed that the restrictions on the choice of tactical positions, imposed by these considerations, are reduced to a minimum.

14. If facilities exist it is most desirable that all sections in defence should dig in, be concealed, a detailed inspection of the position made, and shooting carried out on targets within the arc and on fixed lines.

15. Although the officer framing the exercise cannot normally order the occupation of direct or indirect positions, situations can be created which will influence the platoon commander to adopt whichever is desired.

Conduct of the exercises

16. Before the exercise begins, the opening narrative should be explained to all ranks taking part. Any assumed locations and movements of enemy and our own troops should be explained throughout the exercise. For purpose of co-operation, it may be desirable to represent headquarters of our own troops.

17. Special attention will be paid to the following subjects:—

- (a) Reconnaissance and issue of orders by platoon and section commanders.
- (b) Fire direction, fire control and fire discipline.
- (c) Section and platoon drill.
- (d) Care and concealment of guns, personnel, stores and vehicles during all phases.
- (e) Ammunition supply.
- (f) Tactical handling, driving and concealment of vehicles.

18. Where range facilities exist, it may be possible for a platoon commander to exercise all the sections of his platoon within a complete machine gun platoon plan. Such exercises must be timed and arranged so as to ensure:—

- (a) The safety of all sections taking part.
- (b) That the platoon commander or an assistant director is present with each section during its reconnaissance, occupation, and engagement of targets.

19. It may be found valuable for a number of exercises to be rehearsed before the sections carry them out with ammunition.

When range facilities allow a variety of different exercises to be staged, sections should act as spectators during any exercise which they themselves are not to carry out.

20. In order to produce conditions resembling as far as possible those of active service, problems dealing with or caused by, the following should be introduced occasionally:—

Casualties, protection from gas, the safety of our own troops, firing from camouflaged covering, ammunition supply, and administration.

21. Indirect fire and night shooting necessitating reconnaissance by day should be practised. In such cases the reconnaissance, as well as the shooting, must be carried out under active service conditions.

22. Among the targets selected for engagement should be screens camouflaged or hidden behind natural objects such as bushes, so that the amount of fire effect may be discovered.

Supervision of the exercises

23. One officer or NCO will be detailed to watch the action of, and hear the orders issued by, the platoon and each section commander taking part in the exercise.

24. One NCO will be detailed to watch the actions of the personnel of each section, other than the commander.

25. These officers and NCOs will also be responsible to the officer superintending for safety precautions, but, apart from ensuring that these are observed, they will not interfere with the actions of the commanders or sections whom they are watching.

26. If possible, officers and non-commissioned officers, detailed for supervision should be taken over the ground by the directing officer the day before the scheme takes place, so that they may be fully conversant with the probable actions of the commanders taking part.

27. At the conclusion of each exercise the directing officer should hold a short conference on the ground. All commanders, superintending officers and NCOs should be present. All points which require reference to the ground should then be discussed.

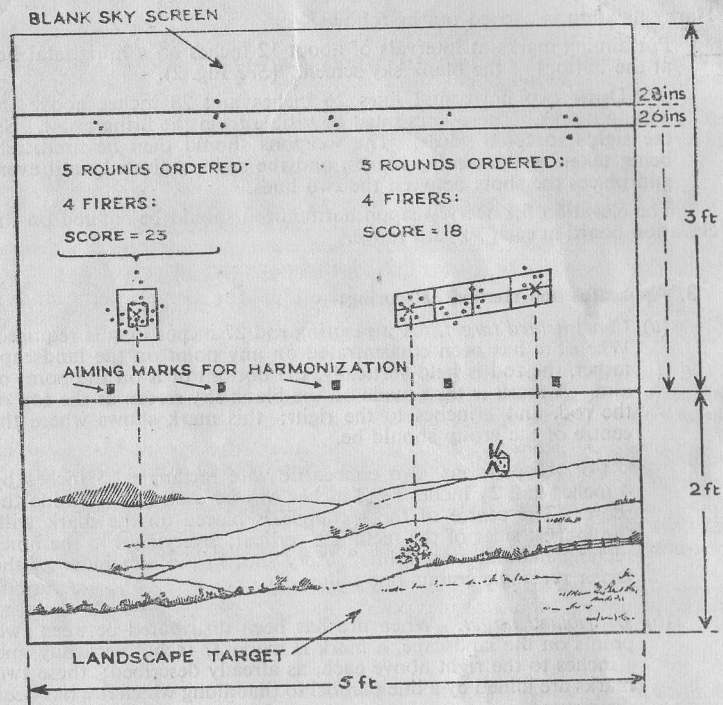


FIG. 2.

USE OF LANDSCAPE TARGETS AND HARMONIZED SIGHTS

(30 yard ranges)

1. *Landscape targets.* The frame for these is 10 feet long and 5 feet high. Landscapes in sheets, 5 feet by 2 feet, are pasted on to the lower portion leaving 3 feet of blank sky-screen above to receive the shots.

The sky-screen should be of brown paper, in order to render the bullet holes invisible to the firers.

2. *Harmonization of sights.* In firing at landscape targets, weapons should be given extra elevation, to ensure that the bullets will strike the blank sky-screen, even if the aim is taken at an object at the bottom of the landscape; this extra elevation necessitates the weapons being harmonized in order that they all shoot to the same height above the point aimed at.

Harmonization is carried out as follows:—

Put aiming marks at intervals of about 12 inches on a horizontal line at the bottom of the blank sky-screen. (See Fig. 2).

Draw two horizontal lines 26 inches and 28 inches above the aiming marks. These lines must be visible from the firing point. Set the sights to 1,400 yards. The weapons should then be fired, aim being taken at the aiming marks, and the sights adjusted until every gun places the shots between the two lines.

The elevation for every weapon harmonized should be entered on the elevation board in each 30 yard range.

3. Apparatus and method of scoring:—

- (a) *Concentrated target.* A measuring rod 27 inches long is required. When fire has been concentrated on any point on the landscape target, the rod is held vertically, the bottom of it on the point of aim. A mark is then made on the blank sky-screen at the top of the rod, and $\frac{5}{8}$ inches to the right; this mark shows where the centre of the group should be.

For competitions, two concentric wire rectangles, 5 inches by 4 inches and $2\frac{1}{2}$ inches by 2 inches will be used to determine the score. The centre of the rectangle is placed on the mark with the longest sides of the rectangle vertical; every shot in the inner rectangle counts two points; every shot in the remainder of the larger rectangle counts one point.

- (b) *Distributed target.* When fire has been distributed between two points on the landscape, a mark is made 27 inches vertically and $\frac{5}{8}$ inches to the right above each, as already described; these two marks are joined by a line parallel to that along which fire has been distributed.

This line is then produced $1\frac{1}{2}$ inches beyond the marks at either end. A line $1\frac{1}{2}$ inches above and another $1\frac{1}{2}$ inches below are drawn parallel to the first line. The ends of these are joined by vertical lines passing $1\frac{1}{2}$ inches outside the two marks (see Fig II). The extra $1\frac{1}{2}$ inches at each end is to allow for the width of the cone of fire of the section.

All shots in the rectangle count one point each to the total score of the section; any shot in a rectangle over and above the number ordered will not count. Shots on the dividing lines count in one rectangle only.

- (c) A miniature replica of the landscape target in use should be available on the firing point. The instructor will mark by means of pins the position or the extent of the target on the replica. The fire controller having identified the target on the landscape, will give the section a fire control order.

The fire controller should give his indication from a firing position in the section, without further reference to the replica.

APPENDIX III

MMG SKILL-AT-ARMS—CONDITIONS OF QUALIFICATION

General

1. Before a NCO or man becomes eligible to undergo the MMG Test he must:—

- (a) Be a fully trained machine gunner.
- (b) Have recently passed Tests of Elementary Training Nos. 1 to 11 inclusive, as laid down in Lesson 60.

2. The MMG test will consist of:—

- (a) Part I—The Fire Discipline test.
- (b) Part II—Tests to be fired on open range at 600 yards or on the 30 yards range.

3. All personnel who qualify will be eligible for “star” pay for the subsequent 12 months, at the end of which period they must qualify again.

4. The tests will be conducted by an officer, fully qualified as a medium machine gun instructor, who will, whenever possible, be from a unit other than the one undergoing the tests.

5. Battle order as laid down for the unit will be worn for the tests.

6. Should a stoppage occur during a times test in Part II due to defective mechanism or faulty ammunition, sufficient time to remedy the stoppage will be allowed.

MMG SKILL-AT-ARMS TEST

PART I—FIRE DISCIPLINE (without ammunition)

Aim

7. To test the man, as No. 1 of a gun in a direct fire unit, in:—

- (a) Recognition of the correct target and of the correct point of aim on the target.
- (b) Correct method of applying fire according to the method of fire ordered.
- (c) Quick and accurate re-laying on order “Stop”

Description

8. The practices will be carried out in the open country, and when this is not feasible a landscape target will be used. It comprises three tests, *ie*, the engagement of one point and two traversing targets.

Preliminary arrangements

9. Equipment required: guns and tripods.

10. Any suitable number of fire units (2 guns) may be employed simultaneously provided that the fire controller can be heard. Guns may be placed close together for the purpose of the tests, and should be arranged in pairs. The following are required to conduct the test:—

One supervising officer for each pair of fire units (total 4 guns).

A fire controller (officer or senior NCO).

One testing NCO for each gun, who should rehearse their duties beforehand.

11. No. 1 will take post and be informed whether his gun represents No. 1 or No. 2 gun of the fire unit. He will test his clamp, assisted if necessary by the testing NCO. (Nos. 2 are not required).

12. The fire controller will place himself where all Nos. 1 can hear him, and will describe the arc of fire and reference points.

Method of conducting

13. The fire controller will give fire orders to engage the following—at least two of the indications should require aids:—

A point target. A linear target having the same range to each end.

An oblique target having a different range to each end.

He will use no signals throughout the fire order. The order to "Fire" etc, will be given verbally in each fire order, fictitious or actual ranges being included.

14. During the execution of each fire order, the testing NCO will check the No. 1 of his gun as follows:—

(a) When the fire controller orders "Lay," he will check the aim and note whether No. 1 has recognized the correct target and laid on the correct portion of the target according to the nature of the fire order.

(b) When the order "Fire" is given, he will notice whether No. 1 traverses correctly, *ie*, in correct direction, checking aim, etc.

(c) When the order "Stop" is given, he will check the aim of No. 1 to see if he has relaid on his original point of aim (irrespective of whether the original aim was the correct one or not).

In each of the above the No. 1 will be either right or wrong and the testing NCO will record accordingly.

Note.—The supervising officer, at his discretion, will check the decisions of the testing NCOs. He will not allow No. 1 to call for a repeat of the indication unless, in his opinion, the indication has been at fault.

Scoring

15. The standard will be assessed by the following deductions:—

For each case of incorrect recognition ...	...	...	3 points
For each case of incorrect laying ...	...	...	1 point
For each case of incorrect traversing ...	...	...	1 point
For each case of not re-laying ...	...	...	1 point

Standard

16. Standard A.	Not more than a total of 2 points deducted.
Standard B.	Not more than a total of 4 points deducted.
Standard C.	More than a total of 4 points deducted.

PART II.

To be fired on open Range at 600 yards or on the 30 yards range.

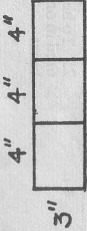
Test	Range	Target	Rounds	Detail	Remarks
1	25	White screen with aiming mark	15	<p><i>Aim:</i> To test the practical application of controlled corrections, direct fire</p> <p>(i) Rounds to be spaced in three groups of 5 rounds each</p> <p>(ii) Before the practice begins the firer will test and adjust the clamp</p> <p>(iii) The gun will be mounted, loaded and laid on the aiming mark with the necessary range on the sight to hit the aiming mark. (This should be in the neighbourhood of 450 yards)</p> <p>(iv) The order "Fire" will be given</p> <p>(v) After firing the first burst the firer will be given a range correction of not less than 200 and not more than 400 yards</p> <p>(vi) Before firing the final burst the firer will be given, in addition to the range correction as for the second burst, a correction for line of 2 or 3 taps</p>	<p>(see para 18).</p> <p>Each shot within a 2½ by 2½ ins square—2 points</p> <p><i>Standard</i></p> <p>A—20 points B—10 to 19 points C—less than 10 points</p>
2	25	White screen with aiming mark	15	<p><i>Aim:</i> To test the man in the practical application of controlled corrections, indirect fire</p> <p>(i) Rounds to be spaced in three groups of 5 rounds</p> <p>(ii) The gun will be mounted with the dial sight attached</p> <p>(iii) Using the tangent sight, the gun will be laid on the aiming mark. The tangent sight will be lowered and the quadrant elevation recorded. The aiming post will be put out and the tangent sight aligned on it.</p> <p>(iv) The orders "Lead", and "Fire" will be given and corrections ordered for range and line</p>	Scoring As for Test 1
3	25	4 white screens with aiming marks	40	<p><i>Aim:</i> To test the man in maintaining the gun in action by remedying stoppages</p> <p>(i) In this test the man will in turn remedy four stoppages, relay correctly, and fire a burst after each</p>	Scoring (i) Points up to a maximum of 68 will be allotted as follows:—Time (not over 1 min 45 sec)—20 points

Test	Range	Target	Rounds	Detail	Remarks
3— contd				<p>(ii) (a) Four guns will be mounted with suitable intervals between guns</p> <p>(b) Each gun will be set up with a stoppage and the crank handle will be covered with a cloth. Sufficient live rounds will be placed in the belt to ensure that a burst of at least 5 rounds can be fired on the target after the stoppage has been remedied. Stoppages may be set up with live rounds or drill cartridges, whichever is convenient. The majority of stoppages prepared will be the longer ones; not more than one short stoppage, eg, misfire, weak charge, will be set up</p> <p>(iii) Time allowed for the test—1 min 45 secs from the command "Go" until the last burst is fired. On the command "Go" the man will get down behind No. 1 gun, carry out the IA relay, and fire on the target. He will repeat this procedure at each gun</p>	<p>Correct IA—10 points at each gun—40 points</p> <p>Correct relaying—2 points for each gun—8 points</p> <p>(ii) Timing—For every 3 secs, or part of 3 secs over time, a deduction of 1 point will be made</p> <p>(iii) Correct Immediate Action (IA)—Any authorized method of IA will be permitted provided that the gun is not liable to be damaged and the firer etc, is not endangered. The following deductions will be made:—</p> <p>Failure to carry out necessary IA—minus 10 points</p> <p>Action likely to damage the gun—minus 2 points</p> <p>Minor errors—minus 1 pt.</p> <p>(iv) Laying—Will be judged by the relation of the centre of the group to the aiming point as follows, allowances also being made for the lateral displacement of the foresight.</p> <p>(See para 18):—</p> <p>Laid correctly within 2½-in by 2½-in square</p> <p>Laid incorrectly within 5-in by 5-in square</p> <p>Not relaid, if beyond either above limits</p> <p>For inaccurate laying deduct 1 point and for not relaying 2 points</p> <p>Standard</p> <p>A—55 points or over</p> <p>B—Under 55 points and not less than 35 points</p> <p>C—Less than 35 points</p>

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Test	Range	Target	Rounds	Detail	Remarks
4 (a)	600	Prepared patch on stop butts	75	<p><i>Aim:</i> To register the correct range and wind allowance before applying fire</p> <p>(i) Rounds to be spaced in groups of 25</p> <p>(ii) Gun will be mounted and loaded. When the order "Fire" is given the firer will engage the patch and register the range and wind allowance necessary to hit the centre of it</p>	<p>(i) This practice is only necessary when firing Tests 4(b), 5 or 6 at 600 yards</p> <p>(ii) If observation of strike is difficult, the MPI of each burst with reference to the centre of the patch will be signalled from the butts on a 4 foot target hoisted for the purpose</p>
4 (b)	600	4 ft	25 To be fired in one burst	<p><i>Aim:</i> To test the man in engaging a target using an aiming mark</p> <p>(i) The gun will be mounted and loaded</p> <p>(ii) The target will be indicated to the firer</p> <p>(iii) The range and order "Lay" will be given and the firer will set the sights and lay on the target</p> <p>(iv) The order "Pick up aiming mark" will be given; whereupon the firer will act in accordance with the procedure given in Lesson 72</p> <p>(v) The gun will be tapped off slightly and the elevating wheel turned by the supervising NCO</p> <p>(vi) On the command "Fire" the firer will engage the target with the aid of the aiming mark</p> <p>(vii) Time allowed 25 secs from the command "Fire"</p>	<p>Scoring on 600 yards range</p> <p><i>Deductions:</i> One-fifth of the total hits obtained will be deducted for each second the firer continues to fire after the signal "Stop" has been given</p> <p>Standard</p> <p>A—5 hits</p> <p>B—2-4 hits</p> <p>C—less than 2 hits</p>
	OR 25, if 600 yds range not available	White screen with aiming mark	15 to be fired in one burst	<p>As above, with the addition that after picking up an aiming mark, the target will be covered with a strip of canvas</p>	<p>Scoring on 30 yards range. (See para 18).</p> <p>For each shot within a 2½-in by 2½-in rectangle—2 points. For each shot outside 2½-in by 2½-in square but within a 5-in by 5-in square—1 point</p> <p>Deductions—as above</p> <p>Standard</p> <p>A—25 points</p> <p>B—15 to 24 points</p> <p>C—less than 15 points</p>

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Test	Range	Target	Rounds	Detail	Remarks
5	600	Coloured screen (page 122, Serial 4)	125	<p><i>Aim:</i> To test the practical application of fire on a point target</p> <p>(i) Rounds will not be spaced, but bursts of 25 rounds will be fired</p> <p>(ii) The gun will be mounted and loaded but not laid on the screen for testing the clamp</p> <p>(iii) On the order "Fire," the firer will engage the target by tapping right and left one tap</p> <p>(iv) He will fire 5 bursts and may check his aim and, if necessary, relay twice only, immediately before the third and fifth bursts</p>	<p>Scoring</p> <p>For each hit on the centre section up to 35—1 point</p> <p>For each hit on the flank sections up to 25 on each section—1 point</p> <p>Deductions—25 points for each section not hit</p> <p>Standard</p> <p>A—60 points</p> <p>B—40 points</p> <p>C—less than 40 points</p> <p>Note: No firer can qualify Standard A without obtaining at least 35 hits on the centre section of the screen</p>
	OR 25, if 600 yds range not available	Representative target:—	25	<p>As above, with the exception that bursts of 5 rounds will be fired, the supervising NCO will tap the firer after each burst of 5</p>	<p>Scoring</p> <p>For each hit on the centre section up to 10—1 point</p> <p>For each hit on the flank section—1 point</p> <p>Deductions: 5 points for each section not hit</p> <p>Standard</p> <p>A—12 points</p> <p>B—8 points</p> <p>C—less than 8 points</p>
6	600	<div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;"> 3"  </div> <div style="text-align: center;"> White Grey White 4 ft </div> </div>	75	<p><i>Aim:</i> To test the firer in mounting his gun in the lowest service position and engaging a fleeting target</p> <p>(i) Gun and tripod will be laid on the ground and about three paces in rear of the spot on which the gun is to be mounted. Tripod on the left of the gun, legs to the rear, rear leg set for the sitting position, sights at zero. Ammunition liner and condenser can will be in a convenient position on the firing point</p>	<p>Scoring</p> <p>Standard</p> <p>A—20 or more hits</p> <p>B—1 to 19 hits</p> <p>C—No hits</p>

Test	Range	Target	Rounds	Detail	Remarks
6— contd				<p>(ii) The position at which the firer's target will appear will be indicated to him</p> <p>(iii) On a signal from the firing point the target will be hoisted</p> <p>(iv) As soon as the target appears the gun will be brought into action in the lowest service position and fire opened on the target without further word of command</p> <p>(v) The target will be lowered at the end of the time limit</p> <p>(vi) Time allowed—110 secs. The exposure will be timed from the butts</p>	<p>Scoring</p> <p>Standard</p> <p>A—4 or more hits</p> <p>B—1 to 3 hits</p> <p>C—No hits</p>
	OR 25, if 600 yds range not available	Representative target 2-in by 2-in	15	<p>As above, except that the timing will be done from the firing point</p>	

17. Classification

Classification will be as follows:—For each test a standard A, B or C will be allotted according to the number of points obtained. Towards classification an award of:—

A counts 10 points

B counts 5 points

C counts No points

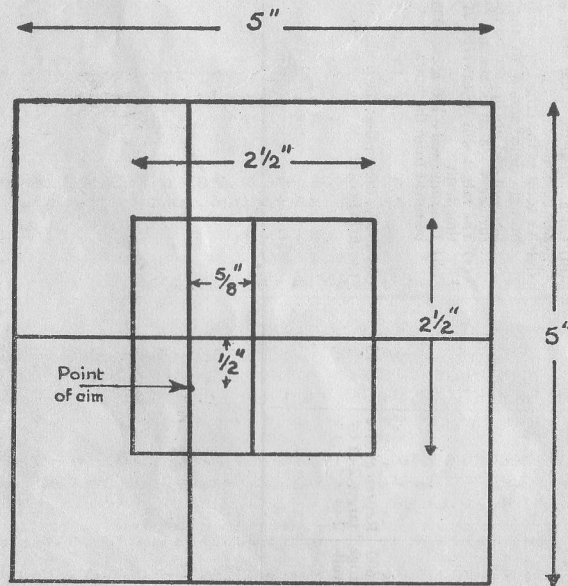
There are seven tests: H.P.S.—70 points

Qualifying standard: 55 points.

18. Scoring Template—25 yards range

(a) The template is designed to allow for:—

- The displacement of the sight in relation to the barrel.
- The aim being laid at the lowest central portion of the aiming mark.



(b) To use the template:—

- Tests 1 and 2—Calculate the distance the correction given will alter the line of sight from the original point of aim.

This distance can be calculated as follows:—

- Elevation—By comparing the T.A. and converting to inches (*see* (b) below).
 - Line.—15 minutes = 4 inches at 25 yards.
Mark this point and then place the template arrow on it.
- (ii) Test 3.—Place the arrow of the template on the point of aim.

APPENDIX IV—LOADING CARRIERS

A INSTRUCTOR'S NOTES

Aim

- To teach the soldier to load the various vehicles in the machine gun platoon.

Class and instructors

- Squads should work under their squad instructors, but be controlled by a supervising officer.

Periods

- One 45-minute period.

Stores

- Platoon commander's carrier, 2 IC's jeep and trailer, section commander's carrier and gun carrier. Complete stores as per G.1098 for each vehicle.

Preparation

- The vehicles should be drawn up in line and loaded beforehand. Blackboards, if available, should be prepared showing the list of stores carried in each type of vehicle.

B CONDUCT OF LESSON

Approach

- Give the aim of the lesson (*see* para 1 above). Explain that there is no fixed drill for loading, but that it is the duty of the senior number in each vehicle to ensure that the stores are complete and loaded in such a manner that they will not become damaged.

Loading vehicle

- Squads should move to each vehicle in turn. Squad instructors should explain what personnel ride in the vehicles, where their personal arms are carried and the stores loaded.

- The squads should be practised in loading each type of vehicle.

- Personnel and their personal weapons are distributed as follows:—

Platoon commander's carrier.

2 IC's jeep and trailer.

Each section commander's carrier.

Each gun carrier.

Motor cycle.

9. The following stores are carried in each type of vehicle:—

Stores (a)	Platoon commander's carrier (b)	Platoon 2 IC jeep and trailer (c)	Each section commander's carrier (d)	Each gun carrier (e)
Vickers .303-inch MG	—	—	—	1
Tripod	—	—	—	1
Dial sight (in case)	—	—	—	1
Condenser can	—	—	1	2
Condenser tube	—	—	—	1
Spare parts case	—	—	—	1
Spare parts box	—	—	1	—
Aiming post	—	—	—	1
Aiming lamp	—	—	—	1
Spare barrel	—	—	—	1
Cleaning rod	—	—	—	1
Case, cans oil	—	1	1	—
Zero posts	—	—	2	—
Instrument box	1	1	—	—
Director No. 9 (in case)	1	1	1	—
Stand, director	1	1	1	—
Rangefinder (in case)	—	—	1	—
Megaphone	1	1	1	—
"Spider"	—	—	—	1
Belts SAA Mk 8Z	12	12	18	19
Rifles	3	1	3	4
Machine carbines	—	2	1	—
Magazines, machine carbines	—	16	8	—
Pistols .38-inch	1	1	—	—
Bren LMG	1	—	1	—
Boxes Bren, magazine	1	—	1	—
3.5-in. RL	—	—	1	—
3.5-in. RL	—	—	6	—
Pistols, signal	1	1	1	—
Cartridges, illuminat- ing	6	6	6	—
Cartridges, signal, red	6	6	6	—
Cartridges, signal, green	6	6	6	—
Grenades	—	12	—	—
No. 31 set complete	2	1	1	—
No. 88 set complete	1	1	1	—
Entrenching tools	1	1	2	1
Hack saw	—	—	1	—
Matchet	—	—	1	—
Wire cutters	—	—	1	—
Picks	1	1	1	1

Stores (a)	Platoon Stores carrier (b)	Platoon 2 IC commander's trailer (c)	Each section jeep and carrier (d)	Each gun carrier (e)
Shovels	1	1	1	1
Axes, hand	—	1	1	—
Nets, camouflage 25 ft. × 12 ft.	1	—	1	1
Nets, camouflage 14 ft. × 14 ft.	—	1	—	1
Cooker No. 2	1	1	1	1
First aid box	1	1	1	1
Packs	5	3	4	4
Blankets	5	3	4	4

Conclusion

11. Questions from the squad.
12. Sum up main items in each vehicle.

APPENDIX V

MANHANDLING OF LOADS—LONG CARRY

The following are suggested *maximum* loads for a long carry. These loads are based on the use of the GS manpack carrier and a maximum load of 70 lb each man. Detailed loads and weights will of course vary according to circumstances such as the distance to be carried, country and nature of operation.

It must be realised however that it will seldom be possible to carry enough ammunition within the section to make the operation practical and that assistance in carrying ammunition will normally be necessary.

Detailed *maximum* loads:—

Section commander.

Director (in case).

Stand, director.

88 set.

2 liners—SAA*

1 pr binoculars

1 pr wire cutters.

Rangefinder.

Rangefinder in canvas case.

2 liners SAA*

Driver operator.
31 set.

No. 1
Tripod
Dial sight
1 liner SAA*

No. 2
Gun
Condenser tube
Spare parts case
1 liner SAA*

No. 3
Condenser can
2 liners SAA

*The above loading allows for the section carrying a total of 12 belts SAA (ie, 6 belts *per* gun) but will greatly reduce the speed and mobility of the section. If carrying parties are available only the No. 3 need carry any ammunition within the section.

For the method of attaching the gun and tripod on a GS manpack carrier *see* Plate 20.

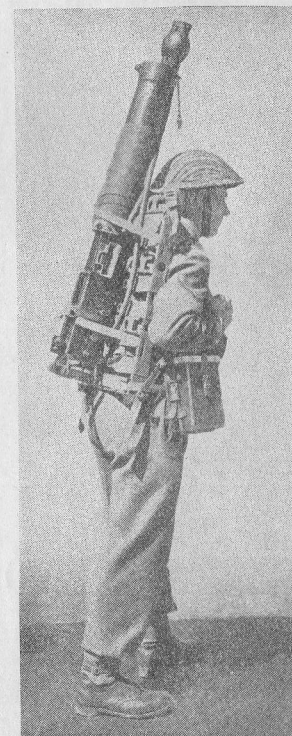
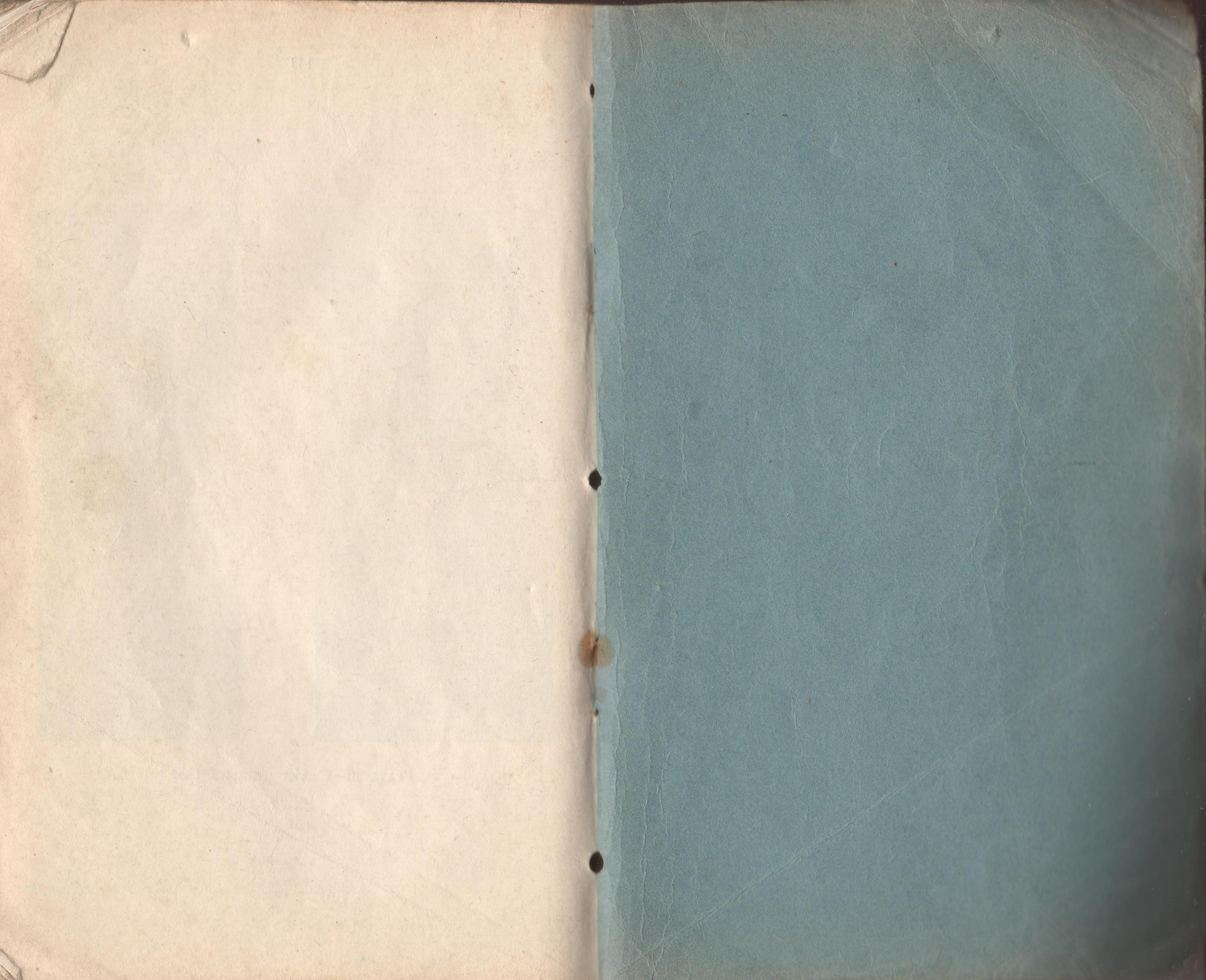


PLATE 20—Carrier manpack GS.



RESTRICTED